GenCore version 5.1.6 Copyright (c) 1993 - 2005 Compugen Ltd.

\$

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM nucleic - nucleic search, using sw model
                                                                                                                                                                                     Database :
                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
Issued Patents NA:*

1: /cgn2_6/ptodata/1/ina/1_COMB.seq:*
2: /cgn2_6/ptodata/1/ina/5_COMB.seq:*
3: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*
4: /cgn2_6/ptodata/1/ina/6B_COMB.seq:*
6: /cgn2_6/ptodata/1/ina/H_COMB.seq:*
6: /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
7: /cgn2_6/ptodata/1/ina/PCCOMB.seq:*
9: /cgn2_6/ptodata/1/ina/RE_COMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      November 25, 2005, 04:24:42; Search time 1057 Seconds

(without alignments)
16356.258 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                             IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-647-057-8
9726
                                                                                                                                                                                                                                                                                                                                                                                                      1303057 segs, 888780828 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       atgagcggcatcaaaaataa.....gagaaaaagggaaaaaatga 9726
                                                                                                                                                                                                                                                                                                                                                                       2606114
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

22 22 23 24	c 114 115 116	C 10 8 7 6 5 7 8 7 10 10 10 10 10 10 10 10 10 10 10 10 10	Result No.
62 61 61 61	79.2 79.2 64.8 64.6 62.4 62.2	9726 9726 2780 2322 2141 1887 1130 116.2 116.2	Score
000000	0.6	100.0 100.0 28.6 23.9 22.0 11.6 1.2	Query Match Length
767677 767677 3337 3337 3337 3337	1039 1039 1891 3095 612 50000	9726 11130 2780 2322 2341 1887 1130 5361 6152 7218	
ωω Ν Ν ω ω			DB.
US-09-949-016-17361 US-09-949-016-17361 US-08-072-610-1 US-08-719-822B-1 US-08-719-822B-1 US-09-092-458-1 US-08-719-821C-1	US-08-781-986A-63 US-09-902-540-1280 US-08-973-462-3 5231168-1 US-09-902-540-1357 US-09-662-254B-24 PCT-US93-07261-10	US-09-841-786-8 US-09-841-786-15 US-09-841-786-13 US-09-841-786-13 US-09-841-786-11 US-09-841-786-12 US-09-841-786-9 US-09-841-786-9 US-08-973-462-1 US-08-973-462-1 US-08-973-462-1 US-08-973-462-1	ID
Sequence 1731, A Sequence 1731, A Sequence 1, Appli Sequence 1, Appli Sequence 1, Appli Sequence 1, Appli	. •	15, 10, 13, 11, 12, 14,	Description

	ი						ი	ი	ი					ი						
.4 5	44	43	42	41	40	39	38	37	36	35	34	ω u	32	31	30	29	28	27	26	Ü
57.4	57.4	57.4	57.4	58.2	58.2	58.2	59	59	59	59	59	59	59	59.4	59.4	59.4	59.4	60	60	00.2
0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
2169	1141	1083	979	4860	3666	3666	32207	32207	32207	3489	3489	3489	3489	14066	4197	4197	1141	1956	1956	6370
w	w	ω	ω	w	N	N	w	w	N	w	w	w	N	w	2	2	W	w	w	L
US-09-434-408-3	US-09-806-708B-22	US-09-830-230A-689	US-09-830-230A-690	US-09-328-352-3221	US-08-682-517-14	US-08-682-517-13	US-09-230-371A-20	US-08-757-669A-20	US-08-770-379-20	US-09-894-273-1	US-09-410-399-1	US-09-298-568-1	US-08-728-323A-1	US-09-601-198-56	US-08-682-517-8	US-08-682-517-7	US-09-806-708B-22	US-09-351-794A-1	US-08-559-896B-1	00-09-704-947-6
Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence		Sequence	4
3, Appl	22, App	689, App	690, App	3221, A	14, App	13, App	20, App	20, App	20, App	1, Appli	1, Appli	1, Appli	1, Appli	56, App1	B, Appli	7, Appli	22, App	1, Appli	1, Appli	

ALIGNMENTS

_	_		_	-	_	н	_	н	_		C	 .					٠. ٠.	٠.	 -				ᆸᅒ
몽	\$	9	8	В	8	Вb	8	₽	8	Quer Best Matc	us-o	SEQ	3 3	Ŋ	Ω (2	3 🖪	<u> </u>	3 ≥	≱:	2 2	GED C	Sec	RESULT US-09-
					`.					J ~	TYPE: DNA ORGANISM: F 09-841-786-8	SOFTWARE:	NUMBER F	PRIOR	CURRENT	FILE	TITLE	APPLICANT	APPLICANT	APPLICANT:	GENERAL INFORMATION	Sequence	RESULT 1 US-09-841-
241	241	181	181	121	121	•	•				14: DN NISM 1-78	TWARE:	왕				ဝှုင်	CANT	CANT	CANT	Ľ.	, e , e , e	1-78
1 >-						61 G	- 61 - G	1 A-	ם ק-	tch ;a1 si; 9726;	4: Fu	00	COF SEQ	Lig	FILING	REN	INVI	i		 Z	FOR	n	786-8
ATA:	ATA	CAA:	Ę.	600	-0 -0 -0	Triri	- T	TGAG	TGAG	mila Co	qosu	tent	~ -	ii	ลีริ	3 13	INVENTION:	HEN	VARA	NAGARAJA,	ORMATIO) 	
TATAGE	TAT	ξ <u>=</u>	CA A	GAC	-6 - 6 - 6	AAT	- A - T	66-	- Ĉ	rity	acte	PatentIn Ver.	ID NOS:	Z,	DATE:	30296			NARAYANAN,	AGARAJA,	 2	Application	
AGCA	-GCA	BATT	SATT	rgAG	rgag	ATT	HATT	ATC	ATC	va	/26 Fusobacterium -8	/er.	3: 15	APPLICATION NUMBER:	2	1 6 1 6	VAC	ď,	Ž.				
AATC	AT TC	CAAC	CAAC	AATT	TTAG	1100		AAA A	- 8 - 8		n ne	2.1	2000-04-25 OS: 15	. 69	01-		CIN		SANJEEV	T. G.		JS/0	
TAT	TAT	ACAAACAAGATTCAAGGGGAGAACGC	- ()	110 100	- 1 - 0	QAT.	- 6 - 13	ATA	ATA	9,	necrophorum		C	9/558,	FILING DATE: 2001-04-24	170	VACCINE ANI	יייי. דעמיי		,		US/09841786	
TT	TIT	GA-	GAA	AAC.	ÄAC.	GIT		Çq-	- CG	Sco Pro O; I	hor			8,257	4	00/2	D ,	5	Χ.			786	
1666	- G - G	CGCT	CGCT	AAA A	- PA - PA - PA	SATT	SATT	rcag	CAG	Score 972 Pred. No. Mismatc	ä			7		<u>.</u>	EPA	Š					
GA-	- GA - SA	1	TTT	ATAC	ATAC	AAC	=\} =\}	AGG	AGG\$						ò	786	RATI	44					
TGGGGAAAAGAATAGTACGGGGGTAAATAATC	AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATC	ACA	ACA(Ä	- š	CTA	CTA:	ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGAGATATCAGATTCT	=£								VACCINE AND PREPARATION THEREOF	Ĭ					
ATAG	ATAG	3777	LILI	AAA	=\} =\}	GAC	[GAC	GA.	=ğ	DB 3;							HERI	Z Z					
TACC	TACG	TAAT	TAAT	GGAT		GGTG		GAGG	କ୍ଷୟ ଜଣ								OF:	S C					
ଜୁ- ଜୁ-	-6 -6	AGA	AGA	AAT	=\ <u>\</u>	AGG		ATA	ATA	Length 9726; Indels 0;								22					
TAA	AATK	TTIG	TTG	TTT	111	CTA		CAG	CAG	و ق							ļ	- -					
ATA	ATA	CIT	-1	ATGA	ATG	ATCA	ATGA	ATTC	ATTO	726;								ž Š					
TCI	-1	TTTAACAGTTTTAATAGATTTGCTTTAACAGAA	ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTTAATAGATTTTGCTTTTAACAGAA	ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTTATGACATTACT	ACCGCGACTGAGAATTTTTGGAACAAAAATAGAAAAAAGGATAATGTTTATGACATTACT	GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC	GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC	i										SIISOBACTEBIIM NECROPHORIM LEIKOTOXIN					
LILL		GA-	- 6 - 8	TACT		ATC		MANA 60	ATGAGCGGCATCAAAAATAACGTTCAGAGGAACAAGGAAGAGGATATCAGATTCTAATATAA	Gaps								_					
300	300	240	240	180	180	120	120	093	60	0													

2401 ÁGAÁTGÁCÁÁTTÁTTCTTCCGGÁTGGÁÁCTTCÁÁÁÁÁÁCÁGGÁÁCTGCTÁTÁGÁÁÁTTGCÁ 2461 AACTATGTTCAGGGAAAATGAAAAAATTAGAGGAAAAATTACCGAAAGGATTTAAAGCT	9 9	321 CTCAGTATCGGAGCGGGATATATTTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGA 138
2401 AGAATGACAATTATTCTTCCCGGATGGAACTTCAAAAACAGGAACTGCTATAGAAATTGCA	Q	CAGCTA TCAGTA
2341 TTATTGAATGCATTTTCAGAAAAATTGGATGGAAAACCGGAGCTTTTACTAAATGGTGAA	D &	261 GCAGCTACTTCTCCATTAAAAATTACCAATTTATATTTTGGAGAAAAGCCAATGGAAAACTT 132
2281 TTTGGAAAAGAACGAAAACTCCAGAATATGATCGAAAGATATTGAATCTATTGAAAAA	B &	1201 GAAGCAACAGAAGGAAAGGCAAATATTCATTCATTCTTACAGTGGAAGTAAGAGCAACTATGGGA 1260
21 AAAAA] 21 AAAAA]	B &	1141 GGATTTTTAGGTTTATTGACAAGTAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGTC 1200
61 CATGCT	g Q	1081 AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCTATCAATTTAAAT 1140
01 GGAAA 01 GGAAA	dg VQ	1021 GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT 1080
4 4	Db Qy	961 ACTCCTTTAAGTTTATCAGATGTGGAAGCTTCCGTAAGAGTAAATAAA
1981 AGACTITCTTCAGGAGTGGAAGGGAGTAATGTAAGGCATTAAATGAAGCTCAAAATCTT 1981 AGACTITCTTCAGGAGTGGAAGGGAGTAATGTAAGGGCATTAAATGAAGCTCAAAATCTT	B &	901 AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGGAAAAAGAAACTTATAAC 960
21 GTGTCT) B &	841 AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT 900 841 AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT 900
61	p	781 CAAAAGCTATGGGAAAAATTCAACTGTTGGAAAGAATAGAAGAATATGTAAAAGGA 840
01 GATCAC	d dy	721 TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCT 780
р р	g 49	661 ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT 720
1 CGTATI	B &	601 ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT 660
21	Db Oy	541 ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAAATCAATGCTGTTGAAGGC 600
	B &	481 GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA 540
1501 GAAGGAGAAATAAATCTTCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACG	B &	4 4
1441 TCTGTTTCTGTTGGAACGATGAGAGATTCCAATAAAGTAGCTCTTTCAGTATTGGTGACG	B &	4 4
1381 GAAGTAAAATCGAAGGGAAGAGCAGATATTACTTCAAAATCTGAAAATACTATTGATGCT 	D Q	301 AACTTTGTCAATGGAAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAAATAAA 360

유 성 유

Ş	B 8	g Qy	Db Oy	g Qy	B 8	Qy Db	QQ QQ	g &	B &	φ 4 9	gg Qy	Qy Db	B Q	B &	당 성	40 40	B 8	В
3541 TCTTTCAGT	3481 GGAGTAAAA 3481 GGAGTAAAA	3421 AATAAAATT 3421 AATAAAATT	3361 TCAGAAGAA 3361 TCAGAAGAA		3241 GTAACAGTA 3241 GTAACAGTA	3181 GCTTCCATT 3181 GCTTCCATT	3121 ACGAAAAT 3121 ACGAAAAAT	3061 GCTTTAAAC 3061 GCTTTAAAC	3001 ATCAGTAAG 3001 ATCAGTAAG	2941 TCTTTTAAT 2941 TCTTTTAAT	2881 GAATTATCA 2881 GAATTATCA	2821 GGAAGATTA 2821 GGAAGATTA	2761 GTGAATTTA 2761 GTGAATTTA	2701 GGAGCTAAA 2701 GGAGCTAAA	2641 GTGGGAGGA 2641 GTGGGAGGA	2581 TATGCAAAT 2581 TATGCAAAT	2521 TTTTCAGAA(2521 TTTTCAGAA(2461 AACTATGTT
TIGGGAGCTICIGG	AAAGCGGGGAATCT AAAGCGGGGAATCT	ACGGATAGTATGGA ACGGATAGTATGGA	AGACCAGAGGGATT AGACCAGAGGGATT	GCCGGAGGAATTAA gCCGGAGGAATTAA	ACTGCGGAATCTTT ACTGCGGAATCTTT	GAAGATAATGACGA GAAGATAATGACGA	gcegcegrcegegr gcegcegrcegegr	agtaagaatgatac agtaagaatgatac	GCAAGAGTTTCCAT CAAGAGTTTCCAT	GGTGGCTCAGGTGG GTGGCTCAGGTGG	ggagaaaatattaa ggagaaaatattaa	AATGTTCAAAGATO AATGTTCAAAGATC	STTGGAAATATTGG STTGGAAATATTGG	CTTGCTGCAAAAA CTTGCTGCAAAAAA	scigiiicgigge scigiiicgigge	TTTCACACTTTTAC	3GATTGAGTGGACTV 3GATTGAGTGGACTV	
TCTTTCAGTTTGGGAGCTTCTGGAAGTGTTTCTTTCAATAATATATAAAAAGGAAACATCT	GGAGTAAAAAAGCGGGGAATCTTCCTTCGAACGTTTCTCATACTCCCGATAAAGGACCG 	AATAAAATTACGGATAGTATGGATTCATTAACAGAAAAAATTACAAATTACATTTCTGAA	TCAGAAGAAGACCAGAGGGATTTTTTGGCAAAATCGGAAACAAAGTGGACTCTGTAAAA 	ATTTCTGTTGCCGGAGGAATTAATAAGGTTGGAAGTAAACCGAGTGAAGAAAAACCGAAA 	GTAACAGTAACTGCGGAATCTTTAGAAGTAGATGCAAAAACGACCGGAACAATCAACAGT 	GCTTCCATTGAAGATAATGACGAAGGACAAAGTAAATATGATAAGAATAAAGATGATGAA	ACGAAAAATGCGGCGGTCGGGGTTGCTGTTGCGGTAAATGATTATGATATTTCAAACAAA	GCTTTAAACAGTAAGAATGATACTTCTGTTTGGAATGCTGCCGGTTCAGCGGGAATCGGA	ATCAGTAAGGCAAGAGTTTCCATTGATGACGAAGCATATTTGAAAGCTAATAAAAAATT 	TCTTTTAATGGTGGCTCAGGTGGGAATGCAATCAATGGAATGGGAAGTTATAGTGGAGGT 	GAATTATCAGGAGAAAATATTAATGCAGATGCATTGAACAGACTTTTTCATGTAGCGGGA	GGAAGATTAAATGTTCAAAGATCGAAAAATTCAGCTATCGTAGAAGCTAAAGAAAAAAGCT 	GTGAATTTAGTTGGAAATATTTGGACTTGCGAGAAGCAGTACATCCGGAAGTGCAGTCGGAGTGAGATTTAGTTGGAAATATTGGACTTGCGAGAAGCAGTACATCCGGAAGTGCAGTCCGGA	GGAGCTAAACTTGCTGCAAAAAAAGATTTAAATATAAAAGCTATCAATAAAGCAGAAACA 	GTGGGAGGAGCTGTTTCGTGGGTAGAACAGGAGAATTATAGCAAGGTATCCGTTGGAAAA 	TATGCAAATTTTCACACTTTTACCTCTTCCGGAGCTAATGGAGAAAGAGATGTTTCTTCT	TITICAGAAGGATIGAGTGGACTGATIAAAGAAACTTIGAATTITACAGGAGTAGGAAAT	
ATAATATTAAAAAG	CTCATACTCCCGAT	AAATTACAAATTAC AAATTACAAATTAC	GAAACAAAGTGGAC GAAACAAAGTGGAC	aaccgagtgaagaa aaccgagtgaagaa	AAACGACCGGAACA 	atgataagaataaa atgataagaataaa	atgattatgatatt atgattatgatatt	CTGCCGGTTCAGCG	ATTTGAAAGCTAAT ATTTGAAAGCTAAT	SAATGGGAAGTTAT SAATGGGAAGTTAT	ACAGACTTTTTCATO ACAGACTTTTTCATO	rcgtagaagctaaa cgtagaagctaaa	STACATCCGGAAGTY STACATCCGGAAGTY	VAGCTATCAATAAA(VAGCTATCAATAAA(ATAGCAAGGTATCCC ATAGCAAGGTATCCC	atggagaaagagatk atggagaaagagatk	IGAATTTTACAGGAO GAATTTTACAGGAO	
GAAACATCT 3600	AAAGGACCG 3540 AAAGGACCG 3540	ATTTCTGAA 3480 ATTTCTGAA 3480	TCTGTAAAA 3420 TCTGTAAAA 3420	AAACCGAAA 3360 AAACCGAAA 3360	ATCAACAGT 3300 ATCAACAGT 3300	GATGATGAA 3240 GATGATGAA 3240	TCAAACAAA 3180 TCAAACAAA 3180	GGAATCGGA 3120 GGAATCGGA 3120	AAAAAATT 3060 AAAAAATT 3060	AGTGGAGGT 3000 AGTGGAGGT 3000	STAGCGGGA 2940 STAGCGGGA 2940	GAAAAAGCT 2880 SAAAAAGCT 2880	GCAGTCGGA 2820 CAGTCGGA 2820	GCAGAAACA 2760 GCAGAAACA 2760	GTTGGAAAA 2700 GTTGGAAAA 2700	FTTTCTTCT 2640	TAGGAAAT 2580 TAGGAAAT 2580	 TTAAAGCT 2520
										.								
Db 5	S B :	o d	S B 5	} B &	문 5) B 4	S & &	? B !	OV B !	Q B 4	D B 4	ב מ מ	?	\$ \$ \$? B &	g	S B :	ον Β.
			4441 AAAGA	4381 GCCAAA 4381 GCCAAA	4321 GACGTO		4201 GCAAAA	4141 AACAAC			3961 GTGAAG	3901 AAAGAA		3781 ATTCAA	3721 ATTGGA		3601 GCTGTCT	3541 TCTTTC
ATTTAAAGCAGA		 acaactagaaaa rgctggaacggai		\GATGTCAAAGG/ \GATGTCAAAGG/	GAAGCTAGCGT	GGAGCGGGATT	GCTCTTTTAGCA		CAAGCTGGAAAC		HIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	AGTGGAGGACAA	AATGCTTTGAGT	AGTAAAACAAGT	AGTGGAAATAGC			AGTTTGGGAGCT GTAGATGGAGTA
ATTGAGTGGAAGO		 \gcaaagaaaaaa raaatccgctgg <i>i</i>		AGITCIGATCIP 	GATAAATCTTCC	GGAAATTATCAA	ACCACTCAAGTG		 ;TCAAATGGAACT :TCTATTAGTGGT	GTCAAATGGAACT	GCAAAATCAGAA	GGAAAAAGTTAT	GGAGGAACTCAA	GCTTTGGTTAAA	AACATCAGTGCT		 AAGATAAATTTG GTTGGAGCATGG	TCTGGAAGTGTT AAGATAAATTTG
CAATAAGGAAGCO	 \GGAGTAGCTATT	 \gaaggagcggtc \ggagtagctatt		GCAPAAGAATAT 	ATCGAAGGAGCT	ATCARAGAGACT	ACTGCTGCAGTG		 GTAGGGGCTACT GGGAGATATACT	CAAGCGGACACT		CTATTGGGAACT		AATAGTGATATT	GGTTTAGCTGGA	GGCGGATCTGGA	 aagggagcaaat ggcggatctgct	TCTTTCAATAAT AAGGGAGCAAAT
			AAGGAACAACTAGAAAAAGGAAAAAAAAGAAGGAGGGGTCATTGTAAATGCTTCTTA	GCCAAAGATGTCAAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTACTAAATGGA 4440	GACGIGGAAGCTAGCGIGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCATT	ASTRUCCULULULULULULULULULULULULULULULULULUL	CAMANGE E I I I I I I I I I I I I I I I I I I				GIGAACHAIGARGI I CUCUCARACH CEAGAAAATACAGCACACCCAAGTGACAGGAGACTTTA GIGHIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	ANALIA DE LA CARTE CONTROL DE LA CARTE DE LA CARTE CARGARA DE LA CARTE CARGARA DE LA CARTE CARGARA DE LA CARTE CARGARA DE LA CARTE C	ARASI JAMA 1901 I ISAS ISANGARATI CANDI ASKACASKA KICABUTI I SUJANGARA 	ALICADAGIA ANGACANGI GELI I ISALI IRAAMA ING ISALI IEGAMA I SECAMINI SECAMI	ATTIGGAAGTGGAAATAGCACTTTTCGTTTAGCTGTTTAGCTGAGAGCGGCTGCTGAATAATAAT ATTIGGAAGTGGAAAATAGCAACATCAGTTGCTGGTTTAGCTGAGAGCGGCTGCTGAAATAATAAT			541 TCTTTCAGTTTGGGAGCTTCTGGAAGTGTTTCTTTCAATAATATTAAAAAGGAAACATCT 601 GCTGTCGTAGATGGAGTAAAGATAAATTTGAAGGGAGCAAATAAAAAGGTAGAGGTGACT
	 GTTAAA 4620 ATTCAT 4680	NGTTAAA 4620		 AAIGGA 4440	GTCATT 4380		426		 AAATTA 4140 GCGGAC 4200	GCTTTA 4080	GAAAGC 4020		ய ய	ມ ເມ ເ			 GTGACT 3660 AATCAT 3720	ACATCT 3600 GTGACT 3660

GTACGAAATGCTTTGGTAAAAAGCAAATCTCATTCATCTATTAAAACAATTGGAATTGGA 5	5581 GTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGA 5640 5641 GTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAAAT 5700 [5521 GAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAA 5580	TTGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGA TTGAATAAGACAGTTTCTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGA TTGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGA	CTATA 5	5281 AATATTGGAAAACAATCAGTTATAGCTATTGTAAAAACAGTAAAATTACAACGGCGAAT 5340	5221 ATTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACA 5280	161 GAGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAGATCAAAAAACAATAAATA	101 GGAGGAATGGTATCTGTCAATCGTGGTTCTGATGAAACGGAAGCTTTAGTTAG	TCATATTACAA	GGAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGCCAAAGCCTCTGGTTTGATTACA 4 GGAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTTGAAT 5	GCGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTACA	GCAAATAATTCCATTCTTGGGGTGAATGTTGCGGGGAACCATTGCCGGTTCTCTTTCTACG	AATGACAC	CTTGCTATCAGCAAAGATGCTTTTTTTAGGAATGGGATCTGGAGCATGGCAAGACTTATCA	4681 GCGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTGGA 4740
QY 6781 ACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGT 6840	Db 6661 GTTGCAATTGGAAATGCCGCAGTCGAAGTGGCTGCAAAAGGAGCTGGAATTGGAAGCAGCA 6720 Oy 6721 GTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGAAAAATTCTAAAATTATG 6780	6661	6541 GGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGAAAGAAGGGAAGTAGAT	Qy 6481 ACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTA 6540	6361 GTTGGTGGAAATGTAGGAGTAGGAGCTTCTTGTGATACCAATATTATAAAAAGAAATACC 6421 AAGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAAATT	QY 6301 CATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGT 6360	ATCAACAAGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAA	OY 6181 AAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAAT 6240	OY 6121 AAAAGAAAAATAAGTAATAAAAAAGGATTTGTTTACCAATAGTTCAGCTACTCATACTTTA 6180 Db 6121 AAAAGAAAAATAAGTAATAAAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTA 6180	QY 6061 GTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAA 6120	QY 6001 AAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTATATTACTACTCCAAGGGCAA 6060	OY 5941 GCAGCAATAGGAGCCTCAACCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTA 6000	OY 5881 ATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGT 5940	QY 5821 AATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTT 5880	QY 5761 GCTGGAGTTGGAGGTGGAGGAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTA 5820 Db 5761 GCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTA 5820

5 8 8 5 8 5 8 5 8 5 8 5 8 5 8 5 8 5 8 5 8 5 8 5 8
6811 TEACCCCCALCTEGRATTCCTTCCATCCATCATTACACTCTTCTACACTCATATANTT 6900 6901 CCANATANGCTACANACACATATACACTCTTCCATCATATACACTCTTCTCACCTCATCTANT 6960 6901 CCANATANGCTACANACACATACACACACACACACACACACACACACAC
8
7921 AGCCCTTCTANAGGANTTGGANGGANATCANAGTGGANAAAAAAAAAA

US-09-841-786-15 (US-09-841-786-15 (Sequence 15, Application US/09841786 PALENT NO. 6669940 (GENERAL INFORMATION: APPLICANT: NAGARAJA, T. G. APPLICANT: NARAYANAN, SANJEEV K. APPLICANT: NARAYANAN, SANJEEV K. APPLICANT: NARAYANAN, SANJEEV K. APPLICANT: NARAYANAN, SANJEEV K. APPLICANT: CHENGAPPA, M. M. TITLE OF INVENTION: VACCINE AND PREPARATION THEREOF FILE REFERENCE: 30296 CURRENT APPLICATION NUMBER: US/09/841,786 CURRENT FILING DATE: 2001-04-24 PRIOR APPLICATION NUMBER: 09/558,257 PRIOR FILING DATE: 2000-04-25 NUMBER OF SEQ ID NOS: 15 SOFTWARE: PALENTIN Ver. 2.1 LENGTH: 11130 TYPE: DNA ORGANISM: PUSCOMERY OF SECONDATE US-09-841-786-15	Db 9661 TCTTCTGAAAAAGCATACAAAAAATTGACATATCAATCAA	Qy 9601 AAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCAT 9660	9541 TTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAAT	TATION OF THE PART	9361 AATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTA	Qy 9301 GGGGTGGCTGAAGCAAGAGGTGCAGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA 9360	QY 9241 AAAAATTCAAAAAATAATATTACTTTAGCATCAAGTAGTGAATGGAATGTGAATGTTCAT 9300	Db 9121 GTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATT 9180 Qy 9181 TCCAATGAGATGGATATTAAAAATTTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACC 9240	
Qy 661 ACAGATTTTAAAAATTTAGTCAATATTAGTGATGAATAAATTCTGGTCTGACCGGAGAT Db 1694 ACAGATTTTAAAAATTTAGTCAATATTAGTGATCAATTAAATTCTGGTCTGACCGGAGAT 1753 Qy 721 TTAAAAGCTACCAAGACAAAATTTAGTGAATATTATTCTTTCAGCTCACATAGATTCTCCCT 780 Db 1754 TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCCT 1813 Qy 781 CAAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCCT 1814 CAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAATAATAGAAATATGTAAAAATT 900 841 AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAAGAAGAATATGAAAAATT 900 871 AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAAGATAGAAAATATTAAAAATT 900 901 AGTGCGAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAAGATAGAAAAATTTAAAC 90 901 AGTGCGAAAGCTACAAATGGAAGTTTATAAAGAAAAATATTAAAAATT 900 901 AGTGCGAAAGCTACAAATGGAAGTTTATAAAGAAAAAAATATAAAAATT 1933 901 AGTGCGAAAGCTACAAATGGGAAGTTTATAAAGAAAAAAAA	Db 1574 ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC 1633 Oy 601 ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT 660	OY 481 GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAAGTAAAA 540	421 ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG	OY 301 AACTITUTICAAAAAATTGAAATTGAAGTAGATTCGAGAAATTCGAGAAATTAA 360	241 AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT	OY 181 ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAA 240	OY 121 ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTATGACATTACT 180	Db 1034 ATGAĞCĞĞCATCAAAAATAACĞTTCAĞAĞĞACAAĞĞATAĞCAĞĞATATCAĞAĞTTCTAAAAAA 1093 Oy 61 GTTTTAATGATTTTGAGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC 120	Query Match Best Local Similarity 100.0%; Score 9726; DB 3; Length 11130; Matches 9726; Conservative 0; Mismatches 0; Indels 0; Gaps 0; Oy 1 ATGAGCGGCATCAAAATAACGTTCAGAGGACAAGGAAGGA

& & &	S & &	B <i>Q</i>	g Q	용 성 8	\$ Q \	용 성	gg Qg	B &	B 6	g 49	dg VQ	B 8	B &	Qy Db	g 9	P & E	를 <i>&</i>
6 10 1	981 AGACTTTCTT	1921 GTGTCTGCAACCATAGCAAATCATAATAATTCTGCTTCTGTGGCAATAGGAGAGAGA	861 894	2 1 1	741 ATTACTAAAAATAGTGTTCTGCAAACAGGATCTGATTTGGGAACTTCCAAGTTTATGAAT 180	1681 CGTATAGATGTAGATGGATATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAAC 1740 	1621 TTGGGGGATAGTGGTAATGGGGTTGTGGCTGCAAATATTTCTAACTATAATGCTTCCTCC 1680	1561 GATGATGTAAATGTGAGAAGTGAAGCGATTAATTCCATTCGAGCTGCTGTAAAAGGTGGA 1620 	1501 GAAGGAGAAAATAAATCTTCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACG 1560 	1441 TCTGTTTCTGTTGGAACGATGAGAGATTCCAATAAAGTAGCTCTTTCAGTATTGGTGACG 1500	1381 GAAGTAAAATCGAAGGGAAGAGCAGATATTACTTCAAAATCTGAAAATACTATTGATGCT 1440 	1321 CTCAGTATCGGAGCGGGATATATTTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGA 1380	1261 GCAGCTACTTCTCCATTAAAAATTACCAATTTATATTTGGAGAAAAGCCAATGGAAAACTT 1320 	201	141 GARTTTTAGGTTTATTGACAAGTAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGTC 120	081 AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCTATCAATTTAAAT 114	1021 GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT 1080
	Q D	- do 9	o B 5	Q QQ	Db Qy	D 4	S B 1	S B 1	o B :	O B :	Q B 4	S B :	S B :	S & S	da Qy	dg Qy	da
4154 3181	D 4094 GCTTTAAACAGTAAGAATACTTCTGTTTGGAATGCTGCCGGTTCAGCGGAATCGGA 4153 9 3121 ACGAAAAATGCGGCGGTTCGGGGTTGCTGTTGCGGTAAATGATATTTCAAACAAA	4034 3061	2941 3974 3001	2881 3914		3794			3614 2641	3554 2581	3494 2521	3434 2461	3374	2281 3314 2341	2221 3254	2161 CATGCTGAATTGGTATCGGAAGGAAAAATTGATATCAACAGTGAAAATAAAATTGAATAT 	3134 GGAAATGCAGCAGTTTTTTATGGAAACTATAAAAATAATGCTTCTGTGACAATTGCCGAT

7501 GGAACTGCAGGTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAAT 7560
8414 7441 8474
7321 8354 7381
726: 829:
720 823
714 817
811
80 0
75
79
787
78
5 7 6 F
601 GTGGAKGAGGCAAAGATTTTGGTAAAAAAAGCTAGAATAACATAGAACAACACAAAACGTTATAGAATAACAACAAAACGTTATAGAACAAAACGTTATAGAACAAAACGTTATAGAACAAAACGTTATAGAACAAAACGTTATAGAACAAAACGTTATAGAACAAAACGTTATAGAACAAAACGTTATAGAACAAAACGTTATAGAACAAAACGTTATAGAACAACATAGAACAACAACAACAACAACAACAACAACAACAACAACAA
6541 GERGECGGREGEGEGERGECGETTECGETARATCERTITION GERANGERS CONTROL CONT
7514 ACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTA

, B &	B &	B 8	B 8	B 8	P 9	유 성	g Q	g 9	g Q	Db Qy	g Q	D Q	B 8	g g	당 오	B &	용 성	Db
8641 AAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACA 8700 9674 AAAAATGAAAATTATGGAAATGTAAAAAGGAACTGGAGGGGCCTTAGTCGGAGCGGAAACA 9733	8581 TTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCT 8640	8521 TTAGCGGTAGCCGGTGTGCATGCACAAGAACAAACAAAGATTTACGAGATCAAACAAG 8580	8461 ATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCT 8520	8401 GAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATAT 8460 	8341 GGAAATGGAGGAGTAATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACT 8400 	8281 ATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCA 8340 	8221 GGTAAAACTATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCA 8280 	8161 GCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCA 8220	8101 CATGCAGATAATGTGAATATGGAAGCAACATAAAATGAAAGTAACAGCAGTTTCTAAA 8160 	8041 GCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTT 8100 	7981 ACTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAA 8040 	7921 AGCCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAAGAAAACAGAGTG 7980 	7861 GAAATGAATTCAGAGGTTGAAATTGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACT 7920 	7801 GCAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAAT 7860 	7741 AAGCTATTAGGAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAA 7800 	7681 GGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCT 7740 	7621 GATATTACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATA 7680	594 TCCGGAGTTACTGTTGAAAATTCTTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCG 86
שמ	B &	S B 8) B 4	S B &	S B S	, B &	, B &	? B &	S & &	S B &) B (S & &) B &	B &	5 p &	S B 8	S B	8
10754 AAATGA 10759	694	SOL AKAMANGGICUGIANGALLIANI KANGIANAKI NGIALIKUNGALAMALIAKA NGICA 	574 TTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTAGAAAGGGAAAGCTAAT	514	421 TRIGCCGGATATGATAAAATTATTATATTATATGAGACAAATTCTAAGGCTATTGGGAT	361 AATINGAACITAATAATGITTOATTIAGCAGGAAAATTAAAACAGAGGGAAACATCAATGIA 394 AATAGAACTAATAATGITTAATTIAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGIA 394 AATAGAACTAATAATGITTAATTIAGCAGGAAAAATTAAAACAGAGGGAAAACATCAATGTA	301 GGGGTGGCTGAAGCAAGAGGTGCAAGAGCAAAGCGACAGTTAGTGTAAAGAATCAAATA 334 GGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA 334 GGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA	241 AAAAATICAAAAAATAATACTTTAGCATCAAGTAGTAATCCAATGGAATGTAATGCATCCAT	1	TOCA A TOCA TOCA TO THE AT A CAPTURE CAPTURE AND A TOCA A TRANSPORT OF A TACA A TOCA A TRANSPORT AND A TACA A TOCA A TRANSPORT A TACA A	TO A MORKATIO TATIOTAMAN CIAL TO SANCHE CANONALIA TAMONIA ILITAMONIA ILITAMON	OUL GETATIGGAAATGITGATGIAAGIAATGIGATGIAAGAAAATGIAGAAGCCAAAATCGGA 	GATGCTTTGAATGAACTTGAATGTAGATCTACAAGAAAAAAGTGGGCTATGGTGAAATT [914 GAAACAAAATCAICCAIISMAAAAACCAAAAAAAAAAAAAAAAAAAAAAA	BAS GANACCANAGGAGGICITGICGGANAGAGIGATITCGGGANAAAAAATTCCAGGG	ATTIGAGA AGGA AGGACGTTTTTTTCCGA AGAA ATGGTTATTTCCGA AAAAATA CAAATTTCCAGGA	734 GCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAA	8701 GCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAA 8760

```
Sequence 10, Application US/09841786

Sequence 10, Application US/09841786

Patent No. 6669940

REPELICANT: NAGARAJA, T. G.

APPLICANT: NAGARAJA, T. G.

APPLICANT: STEWART, GEORGE C.

APPLICANT: CHENGAPPA, M. M.

APPLICANT: CHENGAPPA, M. M.

TITLE OF INVENTION: VACCINE AND PREPARATION THEREOF

FILE REFERENCE 30296

CURRENT APPLICATION NUMBER: US/09/841,786

CURRENT FILING DATE: 2001-04-24

PRIOR APPLICATION NUMBER: 09/558,257

PRIOR FILING DATE: 2000-04-25

NUMBER OF SEQ ID NOI:
SEQ ID NOI:
SEQ ID NOI:
LENGTH: 2780

TYPE: DNA

ORGANISM: Fusobacterium necrophorum

US-09-841-786-10
                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 3
US-09-841-786-10
         밁
                         S
                                                      밁
                                                                       8
                                                                                                밁
                                                                                                                    S
                                                                                                                                                밁
                                                                                                                                                                ঠ
                                                                                                                                                                                           ₽
                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 2780; Conserv
                                                                                                                                                                                                                                                                                                               1159
                                                                                                                                                                                                                                                                                                                                                             1099
                                                                                                                                                                                                                                                                                                                                                                                                        1039
                                                                                                                                                                       1339
                                                                                                                                                                                                                                                                 1219
                                1519
                                                                             1459
                                                                                                                                                                                                                    1279
                                                      541
                                                                                                   481
                                                                                                                                                421
                                                                                                                                                                                              361
                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                 TTTAGCTTTGTTACAGGTTCTATTTCTCCTATCAATTTAAATGGATTTTTAGGTTTATTG
                      TCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACGGATGATGTAAATGTGAGA
                                                                                                  AGAGCAGATATTACTTCAAAATCTGAAAATACTATTGATGCTTCTGTTTCTGTTGGAACG
                                                                                                                                                            TATATITCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGAGAAGTAAAATCGAAGGGA 1398
                                                                                                                                                                                                         AAAATTACCAATTTATATTTGGAGAAAGCCAATGGAAAACTTCTCAGTATCGGAGCGGGA 1338
                                                                                                                                                                                                                                                      GCAAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGAGCAGCTACTTCTCCATTA
                                                                                                                                                                                                                                                                                                    ACAAGTAAGTCCAGTGTCGTTATTGGAAAAAGATGCCAAAGTCGAAGCAACAGAAGGAAAG
                                                                                                                                                                                                                                                                                                                                                                               ACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACTAAGCTTGCAAAGCACTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                GATGTGGAAGCTTCCGTAAGAGTAAATAAAGGAAAAGTCATAGGAAAGAATGTTGACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                              GATGTGGAAGCTTCCGTAAGAGTAAATAAAGGAAAAGTCATAGGAAAGAATGTTGACATT
            TCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACGGATGATGTAAATGTGAGA
                                                       GCAAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGAGCAGCTACTTCTCCATTA
                                                                                                                                                                                                                                                                                        ACAAGTAAGTCCAGTGTCGTTATTGGAAAAAGATGCCAAAGTCGAAGCAACAGAAGGAAAG
                                                                                                                                                                                                                                                                                                                                      TTTAGCTTTGTTACAGGTTCTATTTCTCCTATCAATTTAAATGGATTTTTAGGTTTATTG
                                                                   AAAATTACCAATTTATATTTGGAGAAAGCCAATGGAAAACTTCTCAGTATCGGAGCGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28.6%; Score 2780; I
llarity 100.0%; Pred. No. 0;
Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
-.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 2780;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                 1278
                                 1578
                                                                              1518
                                                                                                                          1458
                                                                                                                                                                                                                                                                                                               1218
                                                                                                                                                                                                                                                                                                                                                                                                         1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1038
                                                                                                     540
                                                                                                                                                 480
                                                                                                                                                                                               420
                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
            660
                                                       600
                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                             S
                                                                                                                                                                                                         밁
                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                               닭
                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                    밁
                                       á
                                                                  밁
                                                                                S
                                                                                                             밁
                                                                                                                               δ
                                                                                                                                                           밁
                                                                                                                                     2479
                                                                                                                                                            1501
                                                                                                                                                                                                          1441
                                                                                                                                                                                                                                                      1381
                                                                                                                                                                                                                                                                             2299
                                                                                                                                                                                                                                                                                                    1321
                                                                                                                                                                                                                                                                                                                            2239
                                                                                                                                                                                                                                                                                                                                                 1261
                                                                                                                                                                                                                                                                                                                                                                        2179
                                                                                                                                                                                                                                                                                                                                                                                                1201
                                                                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                 GAAGGAAAATTGATATCAACAGTGAAAATAAAATTGAATATAAAATCCTTCAAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGGGAGTAATGTAAGGGCATTAAATGAAGCTCAAAATCTTCGAGCGACTACGTCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAGGGAGTAATGTAAGGGCATTAAATGAAGCTCAAAATCTTCGAGCGACCTACGTCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGGAAATAAAGAATAAGCTAACGAACTTATTTAGTGTCCGGTGTGTCTGCAACCATAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTCATCTAAAATCAATTTTAGATGCAATAAAACAGCGGTTTGGAGGAGACAGTGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAACATTACTAAAAATAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGAAAAATTAGAGGAAAAATTACCGAAAGGATTTAAAGCTTTTTCAGAAGGATTGAGT
                                                                                                                                                                                                                      GAAAAATTGGATGGAAAAACCGGAGCTTTTACTAAATGGTGAAAGAATGACAATTATTCTT
                                                                                                                                                                                                                                                                                                                                                                                                 TATGGAAACTATAAAAATAATGCTTCTGTGACAATTGCCGATCATGCTGAATTGGTATCG
                                                                                                                                                                                                                                                                                                                                                                                                           TATGGAAACTATAAAAATAATGCTTCTGTGACAATTGCCGATCATGCTGAATTGGTATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATCATAATAATTCTGCTTCTGTGGCAATAGGAGAGTGGAAGACTTTCTTCAGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATCATAATAATTCTGCTTCTGTGGCAATAGGAGAGAGTGGAAGACTTTCTTCAGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAACATTACTAAAAAATAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGGTTGTGGCTGCAAATATTTCTAACTATAATGCTTCCTCCCGTATAGATGTAGATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTGAAGCGATTAATTCCATTCGAGCTGCTGTAAAAGGTGGATTGGGGGATAGTGGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTGAAGCGATTAATTCCATTCGAGCTGCTGTAAAAGGTGGATTGGGGGGATAGTGGTAAT
TGGGTAGAACAGGAGAATTATAGCAAGGTATCCGTTGGAAAAGGAGCTAAACTTGCTGCA 2718
                        TTTACCTCTTCCGGAGCTAATGGAGAAAGAGATGTTTCTTCTGTGGGAGGAGCTGTTTCG
                                     TTTACCTCTTCCGGAGCTAATGGAGAAAGAGATGTTTCTTCTGTGGGAGGAGCTGTTTCG
                                                                   GGACTGATTAAAGAAACTTTGAATTTTACAGGAGTAGGAAATTATGCAAATTTTCACACT
                                                                                 GGACTGATTAAAGAAACTTTGAATTTTACAGGAGTAAGGAAATTATGCAAATTTTCACACT
                                                                                                                                                             CCGGATGGAACTTCAAAAACAGGAACTGCTATAGAAATTGCAAACTATGTTCAGGGAGAA
                                                                                                                                                                         CCGGATGGAACTTCAAAAACAGGAACTGCTATAGAAATTGCAAACTATGTTCAGGGAGAA
                                                                                                                                                                                                           GAAAAATTGGATGGAAAACCGGAGCTTTTACTAAATGGTGAAAGAATGACAATTATTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1638
                                                                    1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1758
                                                                                                                                                                                                                                                          1440
                                                                                                                                                                                                                                                                                                     1380
                                                                                                                                                                                                                                                                                                                                                                                                1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1878
                        1740
                                              2658
                                                                                           2598
                                                                                                                  1620
                                                                                                                                         2538
                                                                                                                                                                1560
                                                                                                                                                                                     2478
                                                                                                                                                                                                            1500
                                                                                                                                                                                                                                  2418
                                                                                                                                                                                                                                                                               2358
                                                                                                                                                                                                                                                                                                                              2298
                                                                                                                                                                                                                                                                                                                                                   1320
                                                                                                                                                                                                                                                                                                                                                                          2238
                                                                                                                                                                                                                                                                                                                                                                                                                       2178
                                                                                                                                                                                                                                                                                                                                                                                                                                            1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
```

```
RESULT 4
                                                              2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3019
                                                                                                                                                                                                                                                                                                                                                                   2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1801
                                                                                                 GTTGGAGCATGGGGGGGATC
                                                                                                                                                          AAGATAAATTTGAAGGGAGCAAATAAAAAGGTAGAGGTGACTTCTTCTGATTCTACTTTT
                                                                                                                                                                                                                                  TCTGGAAGTGTTTCTATTAATAATATTAAAAAGGAAACATCTGCTGTTCGTAGATGGAGTA
                                                                                                                                                                                                                                                                                                            AATCTTCCTTCGAACGTTTCTCATACTCCCGATAAAGGACCGTCTTTCAGTTTTGGGAGCT
                                                                                                                                                                                                                                                                                                                                                               ATGGATTCATTAACAGAAAAATTACAAATTACATTTCTGAAGGAGTAAAAAAAGCGGGG
                                                                                                                                                                                                                                                                                                                                                                                       GGATTTTTTGGCAAAATCGGAAACAAAGTGGACTCTGTAAAAAATAAAATTACGGATAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGATTTTTTGGCAAAATCGGAAACAAAGTGGACTCTGTAAAAAATTAAAATTACGGATAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTTTAGAAGTAGATGCAAAAACGACCGGAACAATCAACAGTATTTCTGTTTGCCGGAGGA 3318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACGAAGGACAAAGTAAATATGATAAGAATAAAGATGATGAAGTAACAGTAACTGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATACTTCTGTTTGGAATGCTGCCGGTTCAGCGGGAATCGGAACGAAAATGCGGCGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATACTTCTGTTTTGGAATGCTGCCGGTTCAGCGGGAATCGGAACGAAAAATGCGGCGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCATTGATGACGAAGCATATTTGAAAAGCTAATAAAAAAATTGCTTTAAACAGTAAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCATTGATGACGAAGCATATTTGAAAGCTAATAAAAAAATTGCTTTAAACAGTAAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTGGGAATGCAATCAATGGAATGGGAAGTTATAGTGGAGGTATCAGTAAGGCAAGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTAATGCAGATGCATTGAACAGACTTTTTCATGTAGCGGGATCTTTTAATGGTGGCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGATCGAAAAATTCAGCTATCGTAGAAGCTAAAGAAAAAGCTGAATTATCAGGAGAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTGGACTTGCGAGAAGCAGTACATCCGGAAGTGCAGTCGGAGGAAGATTAAATGTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAAAAGATTTAAATATAAAAGCTATCAATAAAGCAGAAACAGTGAATTTAGTTGGAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTGGAAGTGTTTCTTTCAATAATATTAAAAAGGAAACATCTGCTGTCGTAGATGGAGTA
                                                                                                                                                                                                                                                                                         AATCTTCCTTCGAACGTTTCTCATACTCCCGATAAAGGACCGTCTTTCAGTTTTGGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTAATAAGGTTGGAAGTAAACCGAGTGAAGAAAAACCGAAATCAGAAGAAAAACCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTTTAGAAGTAGATGCAAAAACGACCGGAACAATCAACAGTATTTCTGTTGCCGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTGGGAATGCAATCAATGGAATGGGAAGTTATAGTGGAGGTATCAGTAAGGCAAGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGATCGAAAAATTCAGCTATCGTAGAAGCTAAAGAAAAAGCTGAATTATCAGGAGAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAAAGATTTAAATATAAAAGCTATCAATAAAGCAGAAACAGTGAATTTAGTTGGAAAT
                                                                                               3698
                                                                                                                                                                        3678
                                                                                                                                                                                                                                                3618
                                                                                                                                                                                                                                                                                                                                                                                                    3498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1800
                                                                                                                                    2760
                                                                                                                                                                                                             2700
                                                                                                                                                                                                                                                                                       2640
                                                                                                                                                                                                                                                                                                                          3558
                                                                                                                                                                                                                                                                                                                                                               2580
                                                                                                                                                                                                                                                                                                                                                                                                                                         2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 13, Application US/09841786

PALENT NO. 6669940

GENERAL INFORMATION:
APPLICANT: NAGARAJA, T. G.
APPLICANT: STEWART, GEORGE C.
APPLICANT: NARAYANAN, SANJEEV K.
APPLICANT: CHENGAPPA, M. M.
ITITLE OF INVENTION: RECOMBINANT FUSOBACTERIUM NECROPHORUM LEUKOTOXIN
ITITLE OF INVENTION: VACCINE AND PREPARATION THEREOF
FILE REFERENCE: 30296

CURRENT APPLICATION NUMBER: US/09/841,786

CURRENT FILING DATE: 2001-04-24

PRIOR APPLICATION ONMBER: US/558,257

PRIOR FILING DATE: 2000-04-25

NUMBER OF SEQ ID NOS: 15

SOCTWARE: Patentin Ver. 2.1

LENGTH: 2322
                                                                                         ş
                                                                                                                                                            ঠ
                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                              र्
                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                        밁
                                                                                                                                밁
                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; TYPE: DNA
; ORGANISM: Fusobacterium necrophorum
US-09-841-786-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-841-786-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 2322; Conserv
                     8065
                                                                                                                                                                                                                                                7885
                                                                                                                                                                                                                                                                                                                        7825
                                                                                                                                                                                                                                                                                                                                                                                                  7765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7405 GGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTTACAACA
                                                                                                                                  541
                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACA
                                                                              GTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCCGAAGCAAAAGATGCCCGGAAGCTCTTAT 8064
                                                                                                                                                        GAAATCAATGTCAAAGTGGAAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGGACAAGAATAATATCACTTCTACTGGTGGTTTTGGGAACTGCAGGTCTTGCTTCCGCA
TTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAA
                                                                                                                                                                                                             GAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGA
                                                                                                                                                                                                                                  GAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGA
                                                                                                                                                                                                                                                                                                              GTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAAATTCAGAGGTTGAAATT
                                                                                                                                                                                                                                                                                                                                                             GTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCG
                                                                                                                                                                                                                                                                                                                                                                                         GTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTA 7644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGGACAAGAATAATATCACTTCTACTGGTGGTTTTGGGAACTGCAGGTCTTGCTTCCGCA
                                                                                                                                  GAAATCAATGTCAAAGTGGAAAAAAAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCT
                                                                                                                                                                                                                                                                                     GTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAATTCAGAGGTTGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGAT 776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23.9%; Score 2322; Clarity 100.0%; Pred. No. 0; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 2322;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                    600
                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                7944
                                                                                                                                                                                                                                                                                                                                                                                                  7824
                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
```

र् 8 중 유

S

음 성

480

420

300

ş 밁 중 유

밁

Ş

밁 ð 밁 Ş 뫄 Ş Ş

밁 Ş 맑 Ş 밁 ঠ 밁 5 밁 Ś

음 성 음

```
망
                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                    밁
                                                                                                                                                                 8
                                                                                                                                                                                          밁
                                                                                                                                                                                                        8
                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                              · 호
                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                            5
              Ş
                                                                      문
                                                                                         श्
                                                                                                                밁
밁
                                    밁
                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8185
                                                                                                                                                                                           1441
                                                                                                                                                                                                                                                                        1321
                                                                                                                                                                                                                                                                                                                                                                                                                               1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8245
1741
                                                                                                                                                                                                                                 1381
                                                                                                                                                                                                                                                                                                                                                     1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGA 8184
                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAA
                                                                                                                                                              AAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGAT
                                                                                                                                                                                                                                            GCAAGAGATAATACGATTGTAAGAGTCAACGGAGACCGAAACGAAGGAGGTCTTGTCGGA 8844
                                                                                                                                                                                                                                                                                   AGTACTACAGGAGCATTGGTTGCAGGAAATTGGGGAAATTGGGAGATAAATTAGAAACGATT
                                                                                                                                                                                                                                                                                                                         AAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAG
                                                                                                                                                                                                                                                                                                                                                      GGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTA
                                                                                                                                                                                                                                                                                                                                                              GGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATTGGAAATGTA 8664
                                                                                                                                                                                                                                                                                                                                                                                          CAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGA
                                                                                                                                                                                                                                                                                                                                                                                                    CAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAAGTGGCCGGA 8364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTTGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAG
          GCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAAT
                                                                          GATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAAT 9024
                                                                                                                                                                                           AAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGAT
                                                                                                                                                                                                                                  GCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGA
                                                                                                                                                                                                                                                                        AGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATT
                                                                                                                                                                                                                                                                                                             AAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAG
GCTGCAGCTGCAGTATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAAT
                                              GGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCCTTGGAAAAGGAGAC
                                      GGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGAC
                                                                                                                                                                                                              8904
                                                                                                                                                                                                                                   1440
                                                                                                                                                                                                                                                                                            8784
                                                                                                                                                                                                                                                                                                                                  8724
                                                                                                                                                                                                                                                                                                                                                                                                             8604
                                                                                                                                                                                                                                                                                                                                                                                                                                1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                    8544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8304
                                                                                               9084
                                                                                                                  1620
                                                                                                                                                      1560
                                                                                                                                                                                             1500
                                                                                                                                                                                                                                                                                                               1320
                                                                                                                                                                                                                                                                                                                                                      1260
                                                                                                                                                                                                                                                                                                                                                                                           1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           720
                                                                           1680
                                      1740
                                                         9144
                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                  멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
               Ş
                                      밁
                                                       á
                                                                                                                                                                                                                                                                                                                         RESULT 5
US-09-841-786-11
                                                                                                                                                                                                                                                                                                                                                                 2281
                                                                                                                                                                                                                                                                                                                                                                                  9685
                                                                                                                                                                                                                                                                                                                                                                                                    2221
                                                                                                                                                                                                                                                                                                                                                                                                                       9625
                                                                                                                                                                                                                                                                                                                                                                                                                                          2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9205
                   3613
  5
```

```
LENGTH: 2141
; TYPE: DNA
; ORGANISM: Fusobacterium necrophorum
US-09-841-786-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 11, Application US/09841786 Patent No. 6669940 GENERAL INFORMATION:
                                                                                                          Query Match 22.0%; Score 2141; Best Local Similarity 100.0%; Pred. No. 0; Matches 2141; Conservative 0; Mismatches
                                                                                                                                                                                                                                            SOFTWARE: PatentIn Ver. SEQ ID NO 11
                                                                                                                                                                                                                                                          APPLICANT: NAGARAJA, T. G.
APPLICANT: NAGARAJA, T. G.
APPLICANT: STEWART, GEORGE C.
APPLICANT: NARAYANAN, SANJEEV K.
APPLICANT: CHENCAPPA, M. M.
TITLE OF INVENTION: RECOMBINANT FUSOBACTERIUM NECROPHORUM LEUKOTOXIN
TITLE OF INVENTION: VACCINE AND PREPARATION THEREOF
FILE REPERENCE: 30296
CURRENT APPLICATION NUMBER: US/09/841,786
CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/558,257
PRIOR FILING DATE: 2000-04-25
NUMBER OF SEQ ID NOS: 15
SOPTWARE: Patentin Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGGAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAGTAAAGATAAATTTGAAGGGAGCAAATAAAAAGGTAGAGGTGACTTCTTCTTCTTCTTCT
                                                            GGAGCTTCTGGAAGTGTTTCTTTCAATAATATTAAAAAGGAAACATCTGCTGTCGTAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGACATATCAATCAAAGAGAGAGAGAAAAAGGGAAAAAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATGAGTGCGATCCGAGAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCA
                                                                                                               Mismatches
                                                                                                                                              DB 3;
                                                                                                               0,
                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9726
                                                                                                               <u>,</u>
                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9444
               3672
                                                                               3612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2040
                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2100
```

33 GCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGAGATAAAATTCATGCGAAACATGTA 4692	13 GARAAAGCARAGRAAAAAAGAAGAGCGGTCATTGTAAATGCTGCTTTATCGGTTGCTGGR 4572	AAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTACTAAATGGAAAAGATAAAAA 4	3 GGATTAGGAAATTATCAAGGGGCTGTTTCTGTCAATAAGATTGACAATGACGTGGAAGCT 4332	AATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGACGCAAAAGCTCTT 4	TTGATGTCACTGCTTATCAAGCGGACACCCAAGTGACAGGAGCTTTAAATTTACAAGCT 40 [GACAAGGAAAAGITATCTATTGGGAACTTCTGCTTCTATCAACTTAGTGAACAATGAA 3 GACAAGGAAAAAGITATCTATTGGGAACTTCTGCTTCTATCAACTTAGTGAACAATGAA 4 GGACAAGGAAAAAGITATCTATTGGGAACTTCTGCTTCTATCAACTTAGTGAACAATGAA 4 GTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCCAAAAAAATGGAT 4 [3 ACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTAAAGTAAATAGTAAAA 240 3 ACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTAAAGTAAATGCT 3852	ACTTTTGTTGGAGCATGGGGGGGATCTGCTGCACTTCAGTGGAATCATATTGGAAGTGGA
RESULT 6 US-09-841-786-12 US-09-841-786-12 ; Sequence 12, Application US/09841786 ; Patent No. 6669940 ; GENERAL INFORMATION: ; APPLICANT: NACARAJA, T. G. ; APPLICANT: STEWART, GEORGE C. ; APPLICANT: NACARANAN, SANJEEV K.		Qy 5473 GTTTCTTCTCATGTTGATCAAAGATTTAGAGGAAGAAATAATGGA 5532		5233 GCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAA	Qy 5113 TCTGTCAATCGTGGTTCTGATGAAACGGAAGCTTTAGTTAG	Qy 4993 AATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGAATGATTCTCATATT 5052	QY 4873 ATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTCTACGGCGGTAGGAGCT 4932	Qy 4753 AAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCAAATGACACGATT 4812

유 성 멍

1141

1081

4633

8 8 8 8 8 8 8

961

4513

4453

901

4573

1021

음 중 음

4393

841

ર્ક

4333

781

8 8 8 8 8 8

4213

661

4273

721

4153

109

ち 음 성

481

4033

4093

541

음 성 음

3973

421

S

3913

361

음 성 음

3853

241

301

S

3793

181

음 성

당 Ś

121

09 6444 GAGAMACICCAMATTRAGACCAGATTCTAMACACAGATATTCCCAGTTCCAGATCCAGA 6523 900 1000000000000000000000000000000000	Oy 6224 TGGCAGGAACTGTTAATATCAACAAGGTTTATTGGCAAAAGCTACGAAGCTCTGTAGAAAATT 6283 Oy 6224 TGGCAGGAACTGTTAATATCAACAAGGTTTATTGGCAAAAGCTCCTGTTAGAAAATT 6283 Db 601 TGGCAGGAACTGTTAATATCAACAAGGTTTATGGAAAAACAGAAAGCTCTTGTAGAAAATT 660 Oy 6284 CTATATTAAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACAAGGAATTCAATCGAAATT Db 661 CTATATTAAAATGCAAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGAGG OY 6344 TAGTAAGGTTCTGTTGGTGGTGGTAAAATCAGGAGTATCAATCGAATACGAATA OB 721 TAGTAAGGTTCTGTTGGTGGTGGAAATGTAGGAGGTAGGAGCTTCTTCTGATACCAATA 780 OY 6404 TTATAAAAAAGAAATACCAAGACAAAGGTTGGAAAAACTACAATGTCTGATACCAATA 780	Oy 6044 TTACTACTCAAGGGCAAGTAGATAAAGTGTAGATAAAGTATTCAAAAATCTTAATATTA 6103 Db 421 TTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATATTA 480 Oy 6104 ACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAGTATTGTTACCAATAAGTT 6163 Db 481 ACGAAGACTTATCACAAAAAAAAAATCTTTATTGGCAAATAAGAATTGTTACCAATAAGTT 540 Oy 6164 CAGCTACTCATAAAATCTTTAAAATCTTTATTGGCAAATAGGATTTGTTACCAATAAGTG 6223	5924 TGTCTGGAGTGGCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAATGAA	Qy 5804 CAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGA 5863	3 B C	PRIOR FILING DATE: 2000-04-25 NUMBER OF SEQ ID NOS: 15 SOFTWARE: Patentin Ver. 2.1 SEQ ID NO 12 LENGTH: 1887 TYPE: DNA ORGANISM: Fusobacterium necrophorum US-09-841-786-12	; APPLICANT: CHENGAPPA, M. M. ; TITLE OF INVENTION: RECOMBINANT PUSOBACTERIUM NECROPHORUM LEUKOTOXIN ; TITLE OF INVENTION: VACCINE AND PREPARATION THEREOF ; FILE REFERENCE: 30296 ; CURRENT APPLICATION NUMBER: US/09/841,786 ; CURRENT FILING DATE: 2001-04-24 ; CURRENT FILING DATE: 201-04-24 ; CURRENT FILING DATE: 201-04-24
	7						

780

720

660

960 900 900 840

```
밁
                                                                                        ş
                                                                                                                                      밁
                                                                                                                                                                Ś
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-841-786-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 9, Application US/09841786 Patent No. 6669940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 11.6%; Score 1130; DB 3; Length 1130; Best Local Similarity 100.0%; Pred. No. 9.7e-221; Matches 1130; Conservative 0; Mismatches 0; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 1130
TYPE: DNA
ORGANISM: Fusobacterium necrophorum
-09-841-786-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: RECOMBINANT FUSOBACTERIUM NECROPHORUM LEUKOTOXIN TITLE OF INVENTION: VACCINE AND PREPARATION THEREOF FILE REFERENCE: 30296
CURRENT APPLICATION NUMBER: US/09/841,786
CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/558,257
PRIOR APPLICATION NUMBER: 09/558,257
PRIOR FILING DATE: 2000-04-25
NUMBER OF SEQ ID NOS: 15
SOFTWARE: Patentin Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: NAGARAJA, T. G.
APPLICANT: STEWART, GEORGE C.
APPLICANT: NARAYANAN, SANJEEV K.
APPLICANT: CHENGAPPA, M. M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1861
                                                                                                541
                      601
                                                          541
                                                                                                                                      481
                                                                                                                                                                            481
                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Н
                                                                                                                                                                                                                                                                                                                                                                      AACTTTGTCAATGGAAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAAACAAGATTCAAGGGGAGAACGCTTTTTAACAGTTTTTAATAGATTTTGCTTTAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCGCGACTGAGAATTTTGGAAACAAAAATAGAAAAAAAGGATAATGTTTTATGACATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTTTAATGATTTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA
ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT
                                                            ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC
                                                                                      ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC
                                                                                                                                      GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA
                                                                                                                                                            GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA
                                                                                                                                                                                                                  ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG
                                                                                                                                                                                                                                        ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG
                                                                                                                                                                                                                                                                                            ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT
                                                                                                                                                                                                                                                                                                                      ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                  AACTTTGTCAATGGAAAAATTGGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGGTAAATAATCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCGCGACTGAGAATTTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTATGACATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTCTACTGGTGGTTTGGGAACTGCAG 1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                600
                                                                                                                                      540
                                                                                                                                                                            540
                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                      660
                                                          600
                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2, Application US/08973462B

Patent No. 6191270

APPLICANT: DRUILHE, PIERRE

APPLICANT: DAUBERSIES, PIERE

APPLICANT: DAUBERSIES, PIERE

FILE REFERENCE: 0660-0125-0 PCT

CURRENT APPLICATION NUMBER: US/08/973,462B

CURRENT PILING DATE: 1998-02-06

EARLIER APPLICATION NUMBER: PCT/FR96/00894

EARLIER APPLICATION NUMBER: PCT/FR96/00894

EARLIER APPLICATION NUMBER: PCT/FR96/00894

EARLIER FILING DATE: 1995-06-12

EARLIER FILING DATE: 1995-06-12

SEATING DATE: 1995-06-13

NUMBER OF SEQ ID NOS: 29

SOFTWARE: Patentin Ver. 2.0
                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멎
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                      밁
                                                                                              밁
                                                                                                                                á
                                                                                                                                                                                                                                                    ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(5361)
US-08-973-462-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-973-462-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                              SEQ ID NO 2
LENGTH: 5361
TYPE: DNA
ORGANISM: P. falciparum
                                                                                                                                                                        Query Match 1.2%;
Best Local Similarity 41.7%;
Matches 1747; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601 ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCCTAT 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATACCAAAGCAAATATTGAATCTGATGCTGTTTTGGAAGCAGATGGAAATATAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAAAAGCTATGGGAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTCAGCTCACATAGATTCTCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT
                                                          ATGTAGATGCAAAAGATCAAAAAACAATAAATACAA---TTGCCGGAAATGCAAATGGAG
                                                                                                                                      GTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGGAAAAAGAAACTTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT
                        <u>ATGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAA</u>
                                                                                                  GTGTTGAAGAAAGTATAGCTTCAAGTGTTGATGAAAGTATAGATTCAAGTATTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGGAAAAAGAAACTTATAAC</u>
                                                                                                                                                                            ..
                                                                                                                                                                        Score 116.2; DB 3;
Pred. No. 8.4e-14;
0; Mismatches 2373;
                                                                                                                                                                                                              Length 5361;
                                                                                                                                                                            Indels
```

1130

1080

67,

Gape

832 5185

6260 AAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAAACATTATTCTGTAAAATCAG 6319	1787 AAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTGTTGTAGAAAGTG 1843 6200 CCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAG 6259	6080 AAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATA 6139	6020 CTANAGAAGAACAGATGATTATTTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATA 6079	TCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAA CCAGTGTGAATGAAATTACAGGATCTACAAGAAGCATATGTAAAAGAATTCTACAGTGATTG CCAGTGTGAATGAAAATCAGGATCTACAAAAGCATATGTAAAAAGATTCTACAGTGATTG	5840 TAAATCATGCAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGG 5899 1493 ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATGTTGAAGAAATGTTGAAGAAA 1552 5900 TAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAA 5959	5780 GAGCTGGAGTGACAGGTTTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAAT 5839	GCAAATCTCATTCAATCTAATAAAACAATTGGAATTGGAGCTGGAGCTGGAGCTGGAGCTGGAGCTGGAAGAAACATTGGAAGTTGGAAGAAAATGTTGAAGAAAATGTTGAAGAA	1253 ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAAAAA 5722 5663 AAAATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAA 5722 1313 TTGTAGCTCCAAGTGTTGTAGAAAAGTCTGGCTCCAAGTGTTGAAGAAAAAA 1372 1313 TTGTAGCTCCAAGTGTTGTAGAAAAAGTCTGGCTCCAAGTGTTGAAGAAAAATAAA 1372			ATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGAAA	AAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTC	ATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAA 	893 GTGTTGAAGAAAGTGTAGAAAAAATGTTGAAGAAAATGTTGAAGAA	GAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAACAATCAGTTA
Db 2984 AAAGTTTAGAAAACAATGAAATGGATAAAGCATTTTTTAGTGAAAATATTTGATAATGAA 3043 Qy 7391 ATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATG 7450	2864 7271 2924 7331	7151 ACCARACAGE CARACAGE AND A COGRAGA CAGARATA COGRAGA AND A COGRAGA CAGARATA CAGARATA COGRAGA CAGARATA CAGARATA COGRAGA CAGARATA CAGARA	7094 2744	7034	2564 6974 3624	Db 2504 TCGAAACTGAGGAAATAAAGGACAGTATTAAATGAGTAGTAAATGTAAAAGGAAAAGCTCTTA 6973 Qy 6914 AAACAGATATCGATAGTACTTTACACTCTTCTACTGATGTAAATGTAAAAGCTCTTA 6973	6794 TAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCAGCTCGGACCGGACCGGACTGAATCAGCTAGCCGGACAATCAGTACTCAGCCGGACAATCAGTACTAATTAAT	Qy 6737 ATGAATCAAACACGAGAGCAAGAGTGAAAAATTATGACTCGAAACAAGT 6793	QY 6677 CCGCAGTCGGAGTGGCAAAAGGAGCTGGAATTGGAGCAGTGGCAGTTACCAAAG 6736	Qy 6617 TTTTGGTAAAAAAGCTGAGAATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATG 6676	QY 6557 GAACCGTTTCCGTAAATCAATTTGCAGGAAGAAGGAGGGAAGTAGATGTGGAAGAAGCAAAGA 6616	Qy 6497 AAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCCGGGGTAGGAGCCGGAGTGGCAG 6556	QY 6437 AAACTACAATGTCTGATGAAGGTTTCGGAGGAAGCTGAAATTACAGCAGATTCTAAGC 6496	QY 6380 TAGGAGCTTCTTCTGATACCAATATTATAAAAAGAAATACCAAGACTAGGACAAGAGTTGGAA 6436	Db 1964 TAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTG 2023

B 8 B 8 B B

Ş

음 성 음

δ

& B 8

8 8 8 8

묽

```
3218
                                                                              4047
CACAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGC
                                                                                                                                                                                                                                                                                                                     CAAGATCGAAAAAGTATCTGATTTAAAAAGATCTTGAAGAAGATATATTAAAAAG-----
                                                                                                                                                                                                                                                                                                                                                              TCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAACATGATATAACGACGACGTTGGATGAAGTTGTAGAATTAAAAGATGTCGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAAGATTCTAAAAGAATAATAGATGCAAAAGATGATACATTAGAAAAAGTTATTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAGAAGCAGATTTAATAAAAGATATGGAAAATTAAAAGAATTAGAAAAAGC--ATTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGAAGTATTTTTCATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGCTGAATCTCAAGGAGCT-----TCTGTAGGAGCAGTAGCAGGGGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAGATGCAGTAGAAGAATCCATAGAAATATCTTCAGATTCTAAAGAAGAAACTGAATCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTAAGGATGAACCGGTTCAAAAAGAGGTAGAAAAAGAAACTGTTAGTATTATTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTTTTTTAATTTGGAAGATGTATTTAAAAGTGAAAGTGATGTAATTACTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---TACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGGTGTTCAAGAAACTGTAACTGAACATGTAGAACAAAATGTATATGTGGATGTTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATAT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTA 7570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGTAATCCAATCAGAAGAAAAGGTTGATTTGAATGAAAATGTGGTTAGTTCGATTTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                тадататтасаасададдасаадаатаататсасттстастддтддттоддаастдсад
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGGAATACAAGAAATTTATTAACAGGTATG-----TTTCGAAGTATAGAAACCAGTA
                                                                           AACTATTGAAACAGATATTTTAGAAGAGAAAAAAGAATAGAAAAAGATCATTTTGAAAA
                                                                                                                                       ACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTA
                                                                                                                                                                                                -- AAGTAAAAGAAATCAAAGAACTTGAAAGTGAAATTTTTAGAAGATTATAAAAGAATTAAA
                                                                                                                                                                                                                                                         TTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGTTGAAATAATGACATTACTAGCAAACTTATTGAAGAAACTCAAGAGTTAAATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTAAAGATAAAGAAAAAGATGTTTCACTAGTTGTTGAAGAAGTTCAAGACAATGATATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATGAATTCAGAGGTTGAAATTGAGAAGAAGTATTTTCAATGAAGAAAATAGAGTAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCTATTAGGAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3097
               8507
                                                                           4106
                                                                                                                                                                                                   4046
                                                                                                                                                                                                                                                                                                                                                                                                                                             3935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7510
```

중 음 중 음

중 음 중 음

중 음 중

8 8 8 8

```
В
                                                                                       S
                                                                                                                             밁
                                                                                                                                                     Ş
                                                                                                                                                                                             g
                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                               ğ
                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                        S
                                                          밁
4884
                                                               4824
                                                                                                9168
                                                                                                                                                                9108
                                                                                                                                                                                                                                 9048
                                                                                                                                                                                                                                                                4644
                                                                                                                                                                                                                                                                                                  8988
                                                                                                                                                                                                                                                                                                                                 4584
                                                                                                                                                                                                                                                                                                                                                                                                   4524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTAAAAGATGTTTTATCTAGTGCATTAGGCATGGATGAAGAACAAATGAAAACAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGATATGGATAAGGAAAGTTTAGAAGATGTAACAACAAAACTTGGAGAAAAGAGTTGAATC
                      TCAATTAATAACCAAAAATTCAAAAAATAATATTACTTTAGCATCAA
                                                                                                                                                                                                                                                                                             CTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATATGTGATTAAGAAAAATGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCATTAGAAGTTGAAGAAGAAAAAATTAGAAGAAGTACACGAATTAAAAGAAGAGGT
AGTATCTAAAGCTTTAGAATCAAAAATGATGTTACTAATGTTTTAA
                                                                 AAAACACGTAGACGAAGTAATGAAATATGTTCAAAAAATTGATAAAGAAGTTGATAAAGA 488
                                                                                              GAATGTACACATTTCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTC
                                                                                                                                 TACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATC
                                                                                                                                                                                                                                                                  AGAAGAAGATATAGAAGAAGATAAAGTTGAAGATATAGATGAAGATATAGATGAAGATAT
                                                                                                                                                                                                                                                                                                                                 TGAAATÁGTAGAÁGTTGAAATGÁÁAGÁTGAAGÁTATÁGÁAGAÁGÁTGTÁGÁÁGAAGATAT
                                                                                                                                                                                                                                                                                                                                                           AAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                   <u>AÁAGÁAAAAATAACÁÁAAÁÁGAAÁGTAÁGGTTTGÁTÁTTAAGGATÁAGGAACCÁÁAAÁGA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                TACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGGAGCGGAAACAGCCGCTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTAGATGA-TTTAAAAAGGAAGTATATTAGACATGTTAAAAGGGAAGATATGGA--ATTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAACATATAATAAGTGGTGATGCGCATATAAAAGGTTTGGAAGAAGATGATTTAGAAGA
                                                                                                                                                                                                  <u> AGGTGAAGACAAAGATGAAGTTATAGATTTAATAGTCCAAAAAGAGAGAAACGCATTGAAAA</u>
                                                                                                                                                                                                                                 AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGTCAACGGAGACGGAACCAAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAA 8867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>AAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGT</u>
4930
                                9274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4286
                                                                                                                                  4823
                                                                                                                                                                                                                                                                                                                                   4643
                                                                                                                                                                                                                                                                                                                                                                  8987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8567
```

RESULT 9
US-08-973-462-1
US-08-973-462-1
; Sequence 1, Application US/08973462B
; Patent No. 6191270
; GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: DAUBERSIES, PIERRE
; APPLICANT: DAUBERSIES, PIERRE
; TITLE OF INVENTION: MALARIAL PRE-ERYTHROCYTIC STAGE POLYPEPTIDE MOLECULES
; TILE REFERENCE: 0660-0125-0 PCT
; CURRENT APPLICATION NUMBER: US/08/973,462B
; CURRENT FILING DATE: 1998-02-06
; EARLIER APPLICATION NUMBER: PCT/FR96/00894
; EARLIER FILING DATE: 1996-06-12
; EARLIER APPLICATION NUMBER: FR 95/07007
; EARLIER APPLICATION NUMBER: FR 95/07007
; EARLIER FILING DATE: 1995-06-13
; NUMBER OF SEQ ID NOS: 29
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 1
LENGTH: 6152

ATTCGAAGAAGAAGCTGAAGAAATAAAAGATCTTGAAGCAGATATATTAAAAGAAGTATC

용

& & & &

중 유

S

음 중 음

ঠ

```
; TYPE: DNA
; ORGANISM: P.
US-08-973-462-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                  닭
                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                 음 성
δ
                              밁
                                                           S
                                                                                               밁
                                                                                                                   ð
                                                                                                                                                            g
                                                                                                                                                                                    8
                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 1.2%;
Best Local Similarity 41.7%;
Matches 1747; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGTTGAAGAAAGTATAGCTTCAAGTGTTGATGAAAGTATAGATTCAAGTATTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGAAA 5542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAA 5422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA 1256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ТАССТАТТСТАЛЛАЛАСАСТАЛЛАТТАСЛАСССССАЛТСАТСАНСАТАСАЛЛАЛАТАТСА 5362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGTTGAAGAAAGTGTAGAAGAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAAAGCGGCTGGAGTTGGAACAGTTGCTCATACAAATATTTGGAAAACAATCAGTTA 5302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTAGATGCAAAAGATCAAAAAAACAATAAATACAA---TTGCCGGAAATGCAAATGGAG
                                                                                                                                                                                             TAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAA
                                                                                                                                                                                                                                                                                                                    GAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATAATACGATAGCAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTTGGTAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA 1496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAA 1436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA 1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                            CCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTG
                                                                                                                                                              TCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAA
                                                                                                                                                                                                                             ATGTTGAAGAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA 1796
                                                                                                                                                                                                                                                             TANATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGG
                                                                                                                                                                                                                                                                                                                                                              ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAA 1676
                                                                                                                                                                                                                                                                                                                                                                                           GC---AAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                             TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA 1556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACAC
 AAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATA 6139
                                                             CTAAAGAAGAACAGATGATTATTACTACTCAAGGGCCAAGTAGATAAAGTGGTAGATA
                                                                                                 GTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAA 1916
                                                                                                                                                                                                                                                                                               ĠŢĠŢĄĠĊŢĠĄĄĄĄŢĠŢŢĠĄĄĠĄĄĄĠŢĠŢĄĠĊŢĠĄĄĄĄŦĠŢŢĠĄĄĠĄĄĄĠŢĠŢĄĠĊŢĠĄĄĄ
                                  GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 116.2; DB 3; Length 6152; Pred. No. 8.8e-14; 0; Mismatches 2373; Indels 67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5185
                                   1976
                                                                                                                                                                   1856
                                                                                                                                                                                                                                                                                                                                                                                                                                 1616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         성 음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유 상 유 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        유왕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유정
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                   밁
                                                                                                                                        Ş
                                                                                                                                                                             밁
                                                                                                                                                                                                        5
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                멂
                                                                                                                                                                                                                                                                                                                                     ર્જ
                                                                            δ
                                                                                                         뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2031 AAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTGTTGTA---GAAAGTG
                                                                                                                                                                                                                                                                                                                                                                                 2688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6557
                                                                                                                                                                                                               6974 ATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTTGCAGCAGTTACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APACAGATATCGATCATAGTACTTTACACTCTTCTACTGATGTAAAATGTAAAAGCTCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCCAGCCGGGTAGGAGCCCGGAGTGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAACAGAAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAAACATTATTCTGTAAAATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCGCTGGTTCAGGACAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAAATCTTTATTGGCAAATG
                                                                                                                                             GAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTG
                                                                                                                                                                                  GTAACATATTAGAGGAGATACAAGAAAATACTATTACTAATGATACTATAGAGGAAAAAT
                                                                                                                                                                                                                                                                                                                                               GAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATTGCAAATAAGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                TAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGAATCAAACACGAGAGCAAGAGTGAAAAATTCTAAAAATT---ATGACTCGAAACAAGT 6793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTCCAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTGGCAGTTACCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAGCTCCAACTGTTGAAGAATTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTG 2507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAAGCAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAACTACAATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGATTCTAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTGTAGCTGAAAATG
 AGCAAACAGCAAGCAAATGCAGGAATCGGAAGCAGCAGCAATCGGAAGCCAATGTCTTGGTAA
                                                                                                                                                                                                                                                 TAGTCACCACAATACTAGAAAACGTAGAAGAAACTACAGCTGAAAGTGTAACTACTTTTA
                                                                                                                                                                                                                                                                                                                                                                                 TTGCTGAAAACGTTGCAACAAATTTATCAGACAATCTTTTAAGTAATTTATTAGGTGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGAAGAAATTGTAGCTCCAAGTGTTGAAGAAAGTGTAGCTCCAAGTGTTGAAGAAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGAAGAAGTGTAGAAGAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTTTGGTAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATG 6676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAAGTG
                                                    ATTTGACTTCCGTACGAGA----AAAAGTAAATGTAACGGCAAAAGAGAGAAAAAATATTA 7150
                                                                                                                   TAGAAGAACTCCACGAAAATGTATTAAGTGCCGCTTTAGAAAATACCCAAAGTGAAGAG
                                                                                                                                                                                                                                                                                                                TCGAAACTGAGGAAATAAAGGACAGTATATTAAATGAGATAGAAGAAGTAAAAAGAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6379
                         7210
                                                                                                                       2987
                                                                                                                                                       7093
                                                                                                                                                                                       2927
                                                                                                                                                                                                                                                      2867
                                                                                                                                                                                                                                                                                     6973
                                                                                                                                                                                                                                                                                                                     2807
                                                                                                                                                                                                                                                                                                                                                      6913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2387
                                                                                                                                                                                                                        7033
```

중 용

9 -	08 AGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAGGAAGGA	8208 4120
9 7	18 AGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGA 8207	8148 4060
9 7	98 AAGAAGTATTTTTCATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAAC 8147 	4002
	28 AATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGG 8087	8028 3942
	32 CTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGG 8027	7982 3882
	22 GCCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAGAAAAGAGAGTGA 7981 	7922 3822
	52 AAATGAATTCAGAGGTTGAAATTGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTA 7921 	7862 3762
)2 CAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATG 7861 	7802 3702
	12 AGCTATTAGGAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAG 7801 	7742 3642
	92 GAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTA 7741 	7682 3582
	26TACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAG 7681	7626 3522
	71 CTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATAT 7625 	7571 3462
	11 GTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTA 7570	7511 3402
	SI TAGATATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAG 7510	7451 3342
)1 ATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATG 7450 	7391 3288
	11 AAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAG 7390 	7331 3228
	11 TAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAA 7330	7271 3168
7 0	.1 ATAATTTTGGAACAGCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTT 7270 	7211 3108
	${\tt TAGAAACTGTGGAACAGGCAGAAGAAGAAGAGCGCAAATACAATTACGGAAATATTTGAAA}$	3048

В	. 5	? 5	\$ \$	D	ধ	рь	ৡ	Db	γQ	Db	Q	Db	Ş	Db	Ş	рb	Ŋ	Дb	8	망	Ş	Вb	Ą	DЬ	δ	B	Q	망	Ş	В	Ś	뮍	Š
5128 AGTATCTAAAGCTTTAGAATCAAAAATGATGTTACTAATGTTTTAA 5174		UDO MAKKANCHINA KOMANGALAMA IMAKALA IGII NAKAMATI IMA IMAKANGANGI IGA IMAKANGANGI	168	GGTTAAAGCGAAAAAGAAAATTAGAAAAAAAGTTGAAGAAGGTGTTAGTGGTCTTAA	9108 TACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATC 9167	4948 AGGTGAAGACAAAGATGAAGTTATAGATTTAATAGTCCAAAAAGAGAAACGCATTGAAAA 5007	9048 AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATT 9107	4888 AGAAGAAGATATAGAAGAAGATAAGTTGAAGATATAGATGAAGATATAGATGAAGATAT 4947	8988 CTATGGTGGAATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGA 9047	4828 TGAAATAGTAGAAGTTGAAATGAAAGATGAAGATATAGAAGA	8928 AAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGG 8987	4768 AAAGAAAAAATAACAAAAAAGAAAGTAAGGTTTGATATTAAGGATAAGGAACCAAAAGA 4827	8868 TACAATTTCAGGGGAAACGAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGG 8927	4708 AAAAGCTCAAAGACCTAAGTTGGAAGAAGTATTATTAAAAGAAGAGGTTAAAGAAG	8808 AGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAA 8867	4648 CTTAAAAGATGTTTTATCTAGTGCATTAGGCATGAAGAAGAACAAATGAAAACAAGAAA 4707	8748 AGGAAATTGGGAAATTGGAAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAG 8807	4588 GGATATGGATAAGGAAAGTTTAGAAGATGTAACAACAAAACTTGGAGAAAGAGTTGAATC 4647	8688 CGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGC 8747	4531 AGTAGATGA-TTTAAAAGGAAGTATATTAGACATGTTAAAGGGAGATATGGAATTAGG 4587	8628 AAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACCTGGAGGAGCCTTAGT 8687	4471 AGAACATATAATAAGTGGTGATGCGCATATAAAAGGTTTGGAAGAAGATGATTTAGAAGA 4530	8568 GAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGC 8627	4411 TTCATTAGAAGTTGAAGAAGAAAAAATTAGAAGAAGTACACGAATTAAAAGAAGAGGT 4470	8508 GAATATAGAATCTTTAGCGGTAGCCGGTGTGCATGCACAAGGAACAAACA	4351 ATTCGAAGAAGCTGAAGAAATAAAAGATCTTGAAGCAGATATTATAAAAGAAGTATC 4410	8448 CACAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGATGATGC 8507	4291 AACTATTGAAACAGATATTTTAGAAGAGAAAAAAGAATAGAAAAAGATCATTTTGAAAA 4350	8388 ACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTA 8447	4233AAGTAAAAGAATCAAAGAACTTGAAAGTGAAATTTTAGAAGATTATAAAGAATTAAA 4290	8328 TTCTGTAGTATCAGGAAATGGAGGAGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGC 8387	4180 CAAGATCGAAAAAGTATCTGATTTAAAAGATCTTGAAGAAGATATTAAAAAG 4232	

문

& 성

```
밁
                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-232-463-14
밁
                                                                   S
                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEX: 899149
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/07/935
FILING DATE:
APPLICATION NUMBER: EP 91 114
FILING DATE: 26-AUG-1991
ATTORNEY/AGENT INFORMATION:
NAME: BENTY, Stephen A.
REGISTRATION NUMBER: 29,768
REFERENCE/DOCKET NUMBER: 3047
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703)836-9300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 7218 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 22313-0299
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: DORNER, F.
APPLICANT: SCHEIFLINGER, F.
APPLICANT: FALKMER, F. G.
TITLE OF INVENTION: RECOMBINANT FOWLPOX VIRUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/232,463
FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 52
CORRESPONDENCE ADDRESS:
ADDRESSEE: Foley & Lardner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7158 AGCAGCAAATGCAGGAATCGGAGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTT 7217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7098 GACTTCCGTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAAC 7157
7338 ACAATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCA
                                                                                                                                                                                                                                                                                                                                                                             7278 TTTAGACGAAGTTAACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAAAAATCTT 7337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5670367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE REFERENCE FOR THE PROPERTY OF THE PROPERTY PROPERTY IN THE PROPERTY PROPERTY IN THE PROPERTY PROPERTY IN THE PROPERTY PROPERTY IN THE PROPERTY PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGAACAGCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAAC 7277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ٧A
                                                                       GGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAAATGTAGATAT 7457
                                                                                                                                                      pTZgpt-F1s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1800 Diagonal Road, Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (703)683-4109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.9%; Score 87.6; DB 2; ilarity 2.4%; Pred. No. 6.3e-08; Conservative 251; Mismatches 120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EP 91 114 300.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US/07/935,313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 7218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                  7397
```

```
RESULT 11
US-08-956-171E-63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                         밁
                                                                               S
                                                                                                                           밁
                                                                                                                                                              á
                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                 US-08-956-171E-63
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 63, Applicati
Patent No. 6593114
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                           Matches 998;
                                                                                                                                                                                                                                                                                                             Query Match 0.8%;
Best Local Similarity 41.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (301) 30 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette, 3.50 inch, 1.

COMPUTER: HP Vectra 486/33

OPERATING SYSTEM: MSDOS version 6.2

SOFTWARE: ASCII Text

CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 60/009,861
FILING DATE: January 5, 1996
APPLICATION NUMBER: 08/781,986
FILING DATE: January 3, 1997
ATTORNEY/AGENT INFORMATION:
NAME: Mark J. Hyman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/08/956,171B FILING DATE: 20-Oct-1997 CLASSIFICATION: <Unknown> PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Steven C. Barash
Michael R. Fannon
TITLE OF INVENTION: Staphylococcus aureus Polynucleotides and Sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REGISTRATION NUMBER: 46,789
REFERENCE/DOCKET NUMBER: PB:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Charles Kunsch
Gil H. Choi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1085 RRRRRRRRRRRRRRRRR 1066
                                                                                                                                                                                                                                                 3782 TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA 3841
3962 TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCC 4021
                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE DESCRIPTION: SEQ ID NO: 63:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
                                                                                                                                                                  3842 AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTA 3901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TACAACAGAGGACAAGAATA 7477
                                                                               дадаладтадардасардаралаладттатстаттадардардарттстатстатства 3961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: Rockville STATE: Maryland
                                         ATACTGAAAATGGTAAAGCAAATCAAGCCATTTCAGCAGCAACTACTAACGCACAAGTTG
                                                                                                                                                                                                            TTAATAAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 8155 base pairs TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZIP: 20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: 9410 Key West Avenue
                                                                                                                        AGATTCAAGCTACGCCAGATGCAACAGATGAAGAAAAAACAAGCAGCTGATGCTGAAGCAA 5770
                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: Human Genome Sciences, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Application
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE: (240) 314-1224
                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patrick S. Dillon
Craig A. Rosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/08956171E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Diskette, 3.50 inch, 1.4Mb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        309-8439
                                                                                                                                                                                                                                                                                             <u>.</u>.
                                                                                                                                                                                                                                                                                                                   Score 79.2; DB 3;
Pred. No. 3.4e-06;
                                                                                                                                                                                                                                                                                                Mismatches 1378;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PB248P1
                                                                                                                                                                                                                                                                                                                                       Length 8155;
                                                                                                                                                                                                                                                                                                  Indels 42;
                                                                                                                                                                                                                                                                                                  Gaps
                                              5830
                                                                                                                                                                                                                   5710
```

4502 AGGAACAACTAGAAAAGCAAAGAAAAGAAAGGAGGGTCATTGTAAATGCTGCTTTAT 4561	ADADAATGATTTAAAGCAAATTGAAGCAGTTAATGAGGAGAGACCAAATTAATGAGATTAAAAAAATGATTTAAAAAAAA
8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	;
TIGGECARATGCACAGTCTTTCCGGACAAGTGCAAAGTGCAAAGTTGCAAGTTGCAGTAGAGCTTGCAGTAGAGCTTGCAGTAGAGCTTGCAGTAGAGCTTGCAGTAGAGCTTGCAGTAGAGCTTGATGCTTGCAGTAGAGCAAATTGCTTGATGCTTGATGCTTGATGCTTGATGCTTGATGCTTGATGCTTGATGCTTGATGCTTGATGCTTGATGCTTGATGCTTGATGCTTGATGCTTGATGCTTGATGCAGTTTAAAAAAAA	AACAAGAAATTAATGATGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAACAA GAGGAATGGTATCATCGTCGATCGTGGTTCTGATGATAACGGAAGCATTAAATCAAGCGAAACCAA GTTTGAAGGAATCATCAACCAAATGATATGTTAATGCAGTTAAGAAAAACATAAAAAAAA

```
RESULT 12
US-08-781-986A-63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                        ई
                                                                                                                                                                                 片
                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                           Ś
ঠ
                                   밁
                                                                    S
                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-781-986A-63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:

NAME: Benson, Bob

REGISTRATION NUMBER: 90,446

REFERENCE/DOCKST NUMBER: PB24:

TELECOMMUNICATION INFORMATION:

TELEPHONE: (301) 309-8504

TELEPAX: (301) 309-8512

INFORMATION FOR SEQ ID NO: 63:
SEQUENCE CHARACTERISTICS:
LENGTH: 8155 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 63, Application US/08781986A
PACENT NO. 6737248
GENERAL INFORMATION:
APPLICANT: Charles Kunsch
TITLE OF INVENTION: Staphylococcus aureus Polynucleotides and Sequences
NUMBER OF SEQUENCES: 5255
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.50 inch, 1.4Mb
COMPUTER: HP Vectra 486/33
OPERATING SYSTEM: MSDOS version 6.2
SOFTWARE: ASCII Text
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION DATA:
APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 9410 Key
CITY: Rockville
STATE: Maryland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: Human Genome Sciences,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6161
 4082
                                                                                                                                                                                                                                                                                         3842 AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTA
                                                                                                                                                                                                                                                                                                                               5651 TTAATAAAAAAGĆAACTGĆACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG
                                                                                                                                                                                                                                                                                                                                                       3782 TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA 3841
                                                                                                           5831 ATGAAGCTAAAGCAAATGCAGAAGCAGCGATTAATGCGGTAACACCAAAAGTTGTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                     998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCAGATGCAGATGCAT 8047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTCAGCTACTCATACTT
 ATTTACAAGCTGGAAAGTCAAATGGAACTGTAGGGGGCTACTGTGACTGTTGCCAAATTAA
                                                                                                                                             TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCC
                                                                                                                                                                                                                 AAGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG
                                                                                                                                                                                                                                                       AGATTCAAGCTACGCCAGATGCAACAGATGAAGAAAAACAAGCAGCTGATGCTGAAGCAA
                                     AAAAAATGGATGTTGATGTCACTGCTTATCAAGCGGACACCCCAAGTGACAGGAGCTTTAA
                                                                                                                                                                                   ATACTGAAAATGGTAAAGCAAATCAAGCCATTTCAGCAGCAACTACTAACGCACAAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                  0.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              West Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US/08/781,986A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PB248PP
                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                 Score 79.2; DB 3;
Pred. No. 3.4e-06;
0; Mismatches 1378;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    storage
                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 8155;
                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                     42;
                                       5950
                                                                         4081
                                                                                                             5890
                                                                                                                                                 4021
                                                                                                                                                                                   5830
                                                                                                                                                                                                                       3961
                                                                                                                                                                                                                                                                                           3901
                                                                                                                                                                                                                                                                                                                               5710
                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          닭
                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                    S
                                                        밁
                                                                                        δ
                                                                                                                                밁
                                                                                                                                                          5
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5951 ATGATCAGAACGCTACAGAAGAAAAAGAAAGCAGCTATTCAACAATTAGCAACAGCAG
                                                                                                                                                                                                                                                                            6773
                                                                                                                                                                                                                                                                                                              4922
                                                                                                                                                                                                                                                                                                                                                  6713
                                                                                                                                                                                                                                                                                                                                                                                      4862
                                                                                                                                                                                                                                                                                                                                                                                                                                                          4802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4562
 TTACAGACGCGAAAAATAATATTACAGCTGCAACTGATGATAATGGTGTAGATCAGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAAAGCTCTTTTAGCAACCACTCAAGTGACTGCTGCAGTGACGACGAGGAGGAGGACAATTA 4261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACAACAAAGTAAATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGACG
                                                                                                                                                                                                                                        GAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGAATG
                                                                                                                                                                                                                                                                                                                                                  GTTTAAATAATAATGCAGCAACTACTACAGGTGATGTAACTACTGCTAAAGATACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGATAAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATACGA 4501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGCTACAACTGAAGAGAAAAATGCAGCAAAAGATTTAGTTTTAAAAAGCTAAAGAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACGTGGAAGCTAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTAAAAATGATGTTGATCAAGCTGTGACAACTCAAAATCAAGCAATTGATAATACAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGACGCTGGAAAGAATTCAATTCAAAGCACGCAACCAGCAACAGCGGTTAAATCAAATG
                                                                                                                                                                                                                                                                                                              CGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTACAG
                                                                                                                                                                                                                                                                                                                                                                                    CAAATAATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTCTACGG
                                                                                                                                                                                                                                                                                                                                                                                                                        ----ACTAATGAAGAAAAAGGTAACGATATTGGACCAGTTAGAGCAGCATATGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGCTAACTGAAATGCAAAATAAATAACTGAAATACTTAATAATAATGAGACT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCAA 4801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCAAGCAATTGACCCAATTCAAGCATCAACAGATGTTAAAACGAATGCAAGAGC-GGAA 6603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATCAAAATATTGAAAATGCACAGTCAATCGATGATGTAAACACTGCAAAAGATAATGCAA 6544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGACTACTGAAGAAAAAGAACAAGCAAATCAACAAGTAGACGCACAATTAACACAAGGTA 6484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAAA 4621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGAACAACTAGAAAAAGCAAAGAAAAAAAGAAGGAGCGGTCATTGTAAATGCTGCTTTAT 4561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGTTGCTGATATTCAAGGTATTACTGCAGATACAACAATTAAAGATGTTG-----CGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGTATCAAGATATCTTAAATGCACAAACAACTAATGATGTTACGCAAATTAAAGATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAAAGATGTCAAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTACTAAATGGAA 4441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTCTGGAGCGGGATTAGGAAATTATCAAGGGGCTGTTTCTGTCAATAAGATTGACAATG
                                                        ATGTCGATCAATCATCAACAAATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAGCTA
                                                                                        AACAAGAAATTAATGATGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAACAA 6952
                                                                                                                                                                  ATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAATCG
                                                                                                                                                                                                      CAGTACAAAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAACCAGCAGGTAAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGATGAATTAGCAACAAAAGCAAACGAACAAAAAGCGCTTATTGCACAAACTGCAGATG 6424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4381
                          5221
                                                                                                                                                                                                                                                                                                                  4981
                                                                                                                                                                                                                                                                                                                                                    6772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6190
```

7012

6892 5041

S

밁 Ś 밁 Ş 밁

음 성

밁 Ş 밁

```
RESULT 13
US-09-902-540-1280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5702
                                                                                             8030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5861
                                                                                             ATGCAGATGCAGATGCAT 8047
                                                                                                                                       GTTCAGCTACTCATACTT 6178
                                                                                                                                                                                 AGAAAAATGCTTTGGAAGCAATCAGAGAAGTGGTTAACAAGCAAATAGGAATAATTAAAA
                                                                                                                                                                                                                         TTAACGAAGACTTATCACAAAAAAGAAAATAAGTAATAAAAAAGGATTTGTTACCAATA
                                                                                                                                                                                                                                                                       CTÁCTGTCÁAAAATAGTGCGCTTGÁACAACTTAAAGCACAACGTATTAATCCTGAAGTTA
                                                                                                                                                                                                                                                                                                                 ATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATA
                                                                                                                                                                                                                                                                                                                                                                AAGACATTTTATCAAAAGCAACTGAAGATATTTCTGATCAAACTACAAATGCAGAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                          GATCTACAAAAGCATATGTAAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGTAAATGTCAACGCTGATGCTACÁÁCTGAÁGAAAAAAGAAGCGTTTÁCGAÁTGCTTTÁG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAACAGAAAAACAAAAAGCTATCGAAGAATTAGAAACTGCACTAGACCAGATTGAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAA 5920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGAAGTTGAAAAAGCGAAAGCTCAAGGACTTGAAGCATTTGATAACATTCAAATCGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAATGATTAAACAAATTACAGATCAAGCTAAACAAGGTATTACTGATGCAACAACAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGARAGAATCTATTGATCAAAGTGACCAGTTAACTGCTGAAGAAAAAACTGAAGCATTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TACGAAATGCTTTGGTAAAAAG------CAAATCTCATTCATCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGTAGATGCTACTGTTAAACCTAAAGCGAACCAAGCTATTGAAGTTAAAGCAGAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOGATAATOGTGACGTTGATGATGCATTAACACAAGGTAAAGCAGCAATTGATGCTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAATTAAGCAAGTTGACCAAAATG---TTCAAACTGCATTAGAAAGCATTAATAATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCAGAAGAAAAATAATATTTCAGCTGACACTAATGCAACACAAGATGAAAAAGCAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACAACAGATTTATATGCTTATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGTCGGAGTTGGAGGAGCAAAAGGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCAAGATAGAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGCTGAAGCGAAACAAAACTTGCTGAATTAAAACAAACTGCGGATCAAAATGTTAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCATATAATGCTAAAGTAAACGAAGCGGATAACTCTAACGCATCGACTTCAAGTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGCTACTTCTAAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATTAATGCAGTTAAAAACATTTAGTGAGTACAAAAAAGATGCTTTAGCTAAAATTGAAG
                                                                                                                                                                                                                           6160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1280, Application US/09902540

Patent No. 683347

GENERAL INFORMATION:
APPLICANT: Goldman, Barry S.
APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Wiegand, Roger C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof FILE REFERENCE: 38-10(15849)B
CURRENT APPLICATION NUMBER: US/99/902,540
CURRENT FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
INUMBER OF SEQ ID NOS: 16825
SEQ ID NO 1280
                                          밁
                                                                               Ş
                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
Ş
                                                                                                                                  밁
                                                                                                                                                                   5
                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                           $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-902-540-1280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
ORGANISM: Myxococcus xanthus
FEATURE:
NAME/KEY: unsure
LOCATION: (1)..(1039)
OTHER INFORMATION: unsure at a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 403; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 1039
                                                                                                                                                                                                                                                                                                                    527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          801
                                                                                                                                                                                                                                                                                                                                                                                                            467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        204 CGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAAAATAATATAGCAAATCTATATTT
                                                                                                                                                                            TATTAGTGATCGAATAAATTCTGGTCTGACCGGAGATTTAAAAAGCTACCAAGACAAAATC
                                                                                                                                                                                                                                                              TAGATTGAAAGATACTGCAATACTAAAGACAGGAATTACAGATTTTAAAAATTTTAGTCAA 683
  TTCAACTGTTGGAAAGAATAGAAGAATATGTAAAAGGAAATACCAAAGCAAATATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTTAACTTTGTCAATGGAAAAATTGA 323
                                                                                                                                     CATTACOGTAGAAGGAAAAATCAATGCTGTTGAAGGCATCGGTTTATATGCGGCGGATAT
                                                                                                                                                                                                                                                                                                                                                                                                          TTTTAATGGAATCATTCCAGTAGATGGAAAAGTTAAAAATTCCATTGAATCCGAATGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTGGAAGAAGCCAAACATGGTAAAGT
                                            TAAAAAAAAAAAAAAAGAATTAACAAAGGCTCTAATCAACACCCCCAATATAACAAAAAA
                                                                                      TGGAGATATTATTCTTTCAGCTCACATAGATTCTCCTCAAAAAGC---TATGGGAAAAAA 800
                                                                                                                                                                                                                           AAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTTATCAATGCTGGTTCTTTTCATTC 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAAATCAAAAAAAAAAAAAAAAAAAAAAAAATTAAAATCAATCATAAAATAAA 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0.8%;
ilarity 44.1%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         al1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 76; DB 3; Length 1039 Pred. No. 7.8e-06; O; Mismatches 507; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         n locations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                466
                                                                                                                                                                                                                           645
                                                                                                                                                                                                                                                                                                                    585
                                                                                                                                                                                                                                                                                                                                                                623
```

S 밁 밁 Ş 밁

5

밁

ঠ

5 B 5

밁 ş B Ş 음 성

В ş 밁 Ş 8 δ

```
Sequence 3, Application US/08973462B

Patent No. 6191270

GENERAL INFORMATION:
APPLICANT: DAUBERSIES, PIERRE
APPLICANT: DAUBERSIES, PIERRE
TITLE OF INVENTION: MALARIAL PRE-ERYTHROCYTIC STAGE POLYPEPTIDE MOLECULES
FILE REFERENCE: 0660-0125-0 PCT
CURRENT APPLICATION NUMBER: US/08/973,462B
CURRENT APPLICATION NUMBER: US/08/973,462B
CURRENT APPLICATION NUMBER: PS6/00894
EARLIER APPLICATION NUMBER: PS6/00894
EARLIER FILING DATE: 1996-06-12
EARLIER FILING DATE: 1995-06-13
NUMBER OF SEQ ID NOS: 29
SOFTWARE: Patentin Ver: 2.0
SEQ ID NO 3
LENGTH: 1891
TYPE: DNA
ORGANISM: P. falciparum
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 14
US-08-973-462-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                            र्
                                                                     밁
                                                                                                  S
                                                                                                                                           밁
                                                                                                                                                                           Ś
                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; NAME/KEY: CDS
; LOCATION: (2)..(1891)
US-08-973-462-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 731;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1041
                                                                                                                                                                                                                                                                                                                                                                                                        5913 TGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAATGA
                                    6207
                                                                                                        6151
                                                                                                                                                                                 6093
                                                                                                                                                                                                                                                                                                                                5973 AATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAAAC
                                                                                                                                                                                                                                                       6033 AGATGATTATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAA
                                                                                                                                              181
                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                766
301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            861 ATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATTAGTGCGAAAGCTACAAATGG
                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                       ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                0.7%;
Similarity 41.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGATTTATAAAGAAAGAAGGGGAAAAAGAAACTTATAACACTCCTTTAAGTTTATCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTACCAATAGTTCA----GCTACTCATACTTTAAAAATCTTTATTGGCAAATGCCGCTGG
                                                                                                                                                                                                                      TAATATTGGACAAAATTCAGAAAAACAAGAAAGTGTATCAGAAAATGTACAAGTCAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAAAAAAAAAA 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCTGAAGCAAAGA 1054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ТАРАРАССАТАРАЛАЛАЙАРАЛАЙАРАЙСАТАЙАЙАСТАЙТРАЛАЙАЙАРАЛАЛАЙАЙТАС 1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTGGAAGCTTCCGTAAGAGTAAATAAAGGAAAAGTCATAGGAAAGAATGTTGACATTAC 1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAACAACAACAATGTTGAAGAAAAAGTTGAAGAAAGTGTAGAAGAAAATGACGAAGA
                                                                                                                                                                               TCTTAATATTAACGAAGACTT--ATCACAAAAAGAAAATAAGTAATAAAAAAAGGATTT
                                                                                                                                                                                                                                                                                               ADATATCTTÄTTAAGTÄÄTATÄGÄÄGAÄCCÄÄÄÄGAÄATATTÄTTÄACÄÄTTTÄTTÄÄÄ
                                                                                                                                                                                                                                                                                                                                                                         TACATTAACTGAAAGTGTAGATGATAATAAAATTTAGAAGAAGCCGAAGATATAAAGGA
                                  TTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGA
                                                                       TTTGGAGGAAAGTCAAGTTAATGACGATATTTTTAATAGTTTAGTAAAAAGTGTTCAACA 300
                                                                                                                                              TGAACTTTTTÄÄTGÄÄTTATTAAÄTAGTGTÄGÄTGTTÄÄTGGÄGÄÄGTÄÄÄÄGÄAAÄTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 64.8; DB 3;
Pred. No. 0.0018;
0; Mismatches 997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1891;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                   6150
                                                                                                                                                                                                                                                           6092
                                                                                                                                                                                                                                                                                                                                    6032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           885
                                                                                                                                              240
                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                        밁
                                                                                                                   S
                                                                                                                                                                밁
                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                               윰
                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                        뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멼
                     밁
                                                S
                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6267
                     1378
                                                                                                                                                                                                                                                                                                                                                                                            1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGATCATAGTACTTTACACTCTTCTACTGATGTAAATGTAAAAGCTCTTAATAAAATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATTGCAAATAAGGTAGAAACAGATAT 6923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTGGAATTCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAAGAAGATTTTGGT
                                                                                                                                                                                                                                                                                                                                                                                          AGAAATCGTAGCTCCAACTGTTGAAGAAAGTGTTGCTGAAAACGTTGCAACAAATTTATC
                                                                                                                                                                                                                                                                                                                                                                                                                             GAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATTGTAGCTCCAACTGTTGAAGAAAGTGTAGCTCCAACTGTTGAAGA---AATTGTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAAGTGTAGCTCCAACTGTTGAAGA 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGTGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGT 6563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAATGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCTTCTGATACCAATATTATAAAAAGAAATACCAAGACAAGAGTTGGAA----AAACTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGTGTTGAAGAAAGTATAGCTTCAAGTGTTGATGAAAGTATAGATTCAAGTATTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACGAATTCAATCGGAGTAGTAGGTTCTGTTGGTGTTGGTGGAAATGTAGGAGTAGGAGC 6386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGTGTAGAAGAAATGTAGAAGAAAATGTAGAAGAAAATGACGACGGAAGTGTAGCCTC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTA 6326
                     CGAAGTTAACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATC
                                                                                          TACTATTACTAATGATACTATAGAGGAAAAATTAGAAGAACTCCACGAAAATGTATTAAG
                                                                                                                             AGCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGA
                                                                                                                                                                  AGAAACTACAGCTGAAAGTGTAACTACTTTTAGTAATATATAGAGGAGATACAAGAAAA 1317
                                                                                                                                                                                                      AAATGCAGGAATCGGAGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAAC
                                                                                                                                                                                                                                           ATTAAATGAGATAGAAGAAGTAAAAGAAAATGTAGTCACCACAATACTAGAAAAAGTAGA
                                                                                                                                                                                                                                                                            CGTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGC
                                                                                                                                                                                                                                                                                                                                                     TGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCGTAGCTCCAAGTGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCAAGTGTTGAAGAAAGTGTAGCTCCAAGTGTTGAAGAAAGTGTAGCTGAAAATGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAACACGAGAGCAAGAGTGAAAAATTCTAAAATTATGACTCGAAACAAGTTAGATGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGA 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCGTAGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGTGTTĠTAĠĄĄĄĠTGTGĠCTCCĄĄGTĠTŤĠĄĄGAAGTGTĀĠCŤCĊĄĄGTGTTĠĄĄGĄ
                                                                                                                                                                                                                                                                                                                   AGACAATCTTTTAAGTAATTTATTAGGTGGTATCGAAACTGAGGAAATAAAGGACAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                        7223
                                                                                                                                                                                                                                             1257
                                                                                                                                                                                                                                                                                7163
                                                                                                                                                                                                                                                                                                                       1197
                                                                                                                                                                                                                                                                                                                                                           7103
                                                                                                                                                                                                                                                                                                                                                                                              1137
                                                                                                                                                                                                                                                                                                                                                                                                                               7043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           600
                                                                                              1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        957
```

```
RESULT 15
5231168-1
                                                                            ક
                                                                                                                   밁
                                                                                                                                                ş
                                                                                                                                                                                밁
                                                                                                                                                                                                          8
                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                       ક
                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                         र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                  ঠ
                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                 용
                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: DZIEGIEL, MORTEN; BORRE, MARTIN; JEPSEN, SOREN, VUUST, JENS; RIENECK, KLAUS; WIND, ANNETTE; JAKOBSEN, PALLE H. TITLE OF INVENTION: MALARIA ANTIGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 0.7%;
Best Local Similarity 42.0%;
Matches 657; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: 19
CURRENT APPLICATION DATA:
APPLICATION MUMBER: US/07/409,658
FILING DATE: 18-SEP-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 3095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NO:1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7404
                                                                                                                                                                                                                  8403
                                                                                                                                                                                                                                                                                                                                                8283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1618
                                                                                                                                                                                                                                                                                                                969
                                                                                                                                                                                                                                                                                                                                                                                                                                                 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5231168
AACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAA 8642
                                                                                                                                        TTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTT
                                                                                                                                                                                                                                                                                                                                                                               AGAAATTCCAGTAAATGAGGATGAATTTGAAGATGTTCACACTGAACAATTAGATTTAGA
                                                                                                                                                                                                                                                                                                                                                                                                               TAAAACTATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGA-----TAT
                                                                                                                                                                                                                 ATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATAT
                                                                                                                                                                                                                                                                                AAATGGAGGAGGAATTGCCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGA
                                                                                                                                                                                                                                                                                                                                             TTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAAAAAGAAAATGTATCTGAAGTTGTTGAAGAAAAACAAAATTCACAAGAATCAGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCTTT 7643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCATTTTTAGTGAAATATTTGATAATGTAAAAGGAATACAAGAAAATTTATTAACAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAAAGTAGAAGAAACAGTAGAAATTAGCGGAGAAAGTTTAGAAAACAATGAAATGGATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAAAAAGTTGCAGAGAATTTAGAGAAATTAAACGAAACTGTATTTAATACTGTATTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCGAAAGTACAATTACGGAAATATTTGAAAATTTAGAAGAAAATGCAGTAGAAAGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAGTAAAAGAAGAGGTCGCTACCACTTTAATAGAAACTGTGGAACAGGCAGAAGAAGA
                                                 AGTAGAAGTTGAAGAAATTCTACCAGAAGATAAAAATG------AAAAAGGTCA
                                                                                 AGCGGTAGCCGGTGTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTT
                                                                                                                   AGTAGAAGTAGAAGAAATACTTCCAGAAGATGATAAAAATGAAAAAGTTGAACATGAAAT
                                                                                                                                                                                AAATAACGAATTTCAAGAAATTAATGAAGATGATAAAAGTGCACATATTCAGCATGAAAT
                                                                                                                                                                                                                                                 AAATGAAGTGGCTCATCCAGAAATTGTTGAAATTGAGGAAGTTTTTTCCTGAACCAAATCA
                                                                                                                                                                                                                                                                                                                TCATAAAACAGTTGATCCAGAAATAGTAGAAGTTGAAGAAATTCCTTCAGAACTACATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATGTT 1743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         agcaggtatttctacagaagatacttctgtaaaagcggatagaggagatactcagggaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 64.6; DB 9;
Pred. No. 0.0023;
0; Mismatches 884;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 3095;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                8402
                                                                                                                                                                                                                                                                                                                                                8342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1497
                                                                                   8582
                                                                                                                                                    8522
                                                                                                                                                                                1148
                                                                                                                                                                                                                  8462
                                                                                                                                                                                                                                                                                                                                                                                 968
                                                                                                                                                                                                                                                                                                                                                                                                               8282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1617
                                                                                                                                                                                                                                                   1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       र्ठ
   유
                      ક
                                                      밁
                                                                                        Ś
                                                                                                                               밁
                                                                                                                                                     ફ
                                                                                                                                                                                       밁
                                                                                                                                                                                                                        성 유
                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                9659
                                                                                                                                                                                                                                9483
                                                                                                                                                                                                                                                                                               9423
                                                                                                                                                                                                                                                                                                                               2037
                                                                                                                                                                                                                                                                                                                                                                                                                               9303
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8643
 2331
                                                                2271
                                                                                                                                                               9542
                                                                                                                                                                                                                                                                2097
                                                                                                                                                                                                                                                                                                                                                              9363
                                                                                                                                                                                                                                                                                                                                                                                                1977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1257
                                                                                                                                 2211
                                                                                                                                                                                                                      CAAAAGTCATGCTGCAGCTGCCTACTGCCACTATTGA-AAAAAATGAAGTAAAAT
 TGCATATGATGGTGTTATTCAAGTTGTAAGTACAATTAAAGGAATAGCAAAGGATATAGT
                                                                                                                                                          TTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATA
                                                                                                                                                                                                 <u>AAGAAAAGATGATGAAAAGGATTCATCAAATAAAAATAAAAAGAAATCATCTTTTATAAC</u>
                                                                                                                                                                                                                                                                                                                                                              TAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATA
                                                                                                                                                                                                                                                                                                                                                                                                                             GGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ANATTCANANATATATTACTTTAGCATCANGTAGTGAATCGAATGTGAATGTTCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAAGAATTCTACCAGAAGATAAAATGAAAAGTTCAACATGAAATAGTAGAGGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGAAGCCAAAATCGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGA 8882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATÄGTAGÄÄGTTGÄÄGAAÄTTCTÄCCÄGÄÄGÄTÄAAÄÄTGÄÄÄÄÄÄÄÄÄGGTCÄACATGÄAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACATGAAATAGTAGAAGTTGAAGAAATTCTACCAGAAGATAAAAATGAAAAAAGGTCAACA 1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGGAGCCTTAGTCGGAGCGGAAACAGC
                                                                                                  AAAAAACGTCGGTAGGATCTAA---TCAGGTAGACTGGTATACGGATAAATATACATGGC
                                                                                                                                   ATATATATCTACAAAGAAATTTAAAAAAGTATCTCAAACTATTGTAAGTGTTATGATTAA
                                                                                                                                                                                                                                                               AGAAGATGATAATGATGAAGAGGATGATGATATAGATTTTGAAGGATT-----ATC
                                                                                                                                                                                                                                                                                             TGCCGGATATGATAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGC
                                                                                                                                                                                                                                                                                                                                 ACCAAATAAAAAGGAAACACCAGTAGTAGATGGTCCAAAACATGTAGAACAAAATATACA
                                                                                                                                                                                                                                                                                                                                                                                                ATCTGAAGGTGAATCCACTAAACCAGATATAGTTCAAATTAAAATAGTACAAGAAAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATTCCACAAGAACCCGTGGTACCTACATTAAATGAAAATGAAAACGTTACTCCCAAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>ĀGĀĀĀTĪCTĪCCĀGĀĀATTGTTGAAATTGAAGAĀGTACCĀTCĀCAAĀCAAATAĀCĀATGA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTTGAAGAATTCTACCAGAAGATAAAAATGAAAAAGTTCAACATGAAATAGTAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTTGAAGAATTCTACCAGAAGAAGATAAAAATGAAAAAGGTCAACATGAAATAGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAGTTGAAGAATTCTACCAGAAGATAAAAATGAAAAAGGTCAACATGAAATAGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAAATAGTAGAGGTTGAAGAAATTCTACCAGAAGATAAAAATGAAAAAGTTGAACATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACATGAAATAGTAGAGGTTGAAGAAATTCTACCAGAAGATGATAAAAATGAAAAAGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTAGAGGTTGAAGAAATTCTACCAGAAGATAAAAATGAAAAAGTTCAACATGAAATAGT
   2390
                                  9718
                                                                                                  9658
                                                                                                                                                                                                                                                                                                 9482
                                                                                                                                                                                                                                                                                                                                                                 9422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1496
                                                                                                                                   2270
                                                                                                                                                                                                 2210
                                                                                                                                                                                                                                                                                                                                 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1616
```

AA

```
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and FILE REFERENCE: 38-10(15849)B
CURRENT APPLICATION NUMBER: US/09/902,540
CURRENT APPLICATION NUMBER: 60/217,883
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 1357
LENGTH: 612
TYPE: DNA
ORGANITOW: "...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 16
US-09-902-540-1357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                             밁
    . . . . . . . .
                                                                                   RESULT 17
US-09-662-254B-24/c
                                                                                                                                             밁
                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1357, Application Patent No. 6833447
                                            Sequence 24, Application US/09662254B Patent No. 6933145 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
APPLICANT: Moyer, 1
APPLICANT: Li, Yi
APPLICANT: Bawden
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Myxococcus xanthus
FEATURE:
NAME/KEY: unsure
LOCATION: (1)...(612)
OTHER INFORMATION: unsure at all n locations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2391
                                                                                                                                                            7470 CAAGAATAATA 7480
                                                                                                                                                                                                                                                                                                                                                                                                   7230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7110 AGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGC
                                                                                                                                                                                                                                                                                                                                                                       164
                                                                                                                                                                                                                                                                                                                                                                                                                                104
                                                                                                                                                                                                  344
                                                                                                                                             404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATA
                                                                                                                                                                                                                                                        AGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAAT
                                                                                                                                                                                                                                                                                                                                                                        AGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGT 7289
                                                                                                                                                                                                   TAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGGA
                                                                                                                                                                                                                                                                                                                  TAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGG
                                                                                                                                           AAAAAAAAATA 414
  Bawden, Alison Louise
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ·Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2393
                              Richard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/09902540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 63.4; DB 3; Length 612; Pred. No. 0.0024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Uses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                           343
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; TYPE: DNA
; ORGANISM: Amsacta moorei entomopoxvirus
US-09-662-254B-24
                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                          S
                                                                밁
                                                                                            Ş
                                                                                                                              밁
                                                                                                                                                              á
                                                                                                                                                                                                 망
                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 469; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn version 3.1 SEQ ID NO 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: Materials and Methods for Delivery and Expression of Heterologous FILE REFERENCE: UF-221CLXC1
CURRENT APPLICATION NUMBER: US/09/662,254B
CURRENT FILING DATE: 2000-09-14
PRIOR APPLICATION NUMBER: 09/086,651
PRIOR APPLICATION NUMBER: 09/086,651
PRIOR PILICATION NUMBER: 09/086,651
PRIOR PILICATION NUMBER: 60/224,479
PRIOR FILING DATE: 2000-08-10
NUMBER OF SEQ.ID NOS: 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 50000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                39878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        40057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              40177
                                                                                                                                                                                                                                                                                                                                        39758
                                                                                                                                                                                                                                                                                                                                                                                                            39818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40117
                                                                                                                                                                                                   39638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        130
                                                                                                                                                                                                                                                                                                                                                                          423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAGTTTTAATG
                                                                                              AGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGATTT 722
                                                                                                                                   CAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTTAACTTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAAATATATTATTAAATATTATATGTGATAAATGTTCTCATACTACTGCATATAAT 39998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAATGCGAAATGTGTAAAAATTACTATATAACAAAATTTAATACTATTATTTCCGAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGGAATATTATGATTATAAATATATATACAAAATTAAATTTATTATATATTTAAATG
                            AAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGAT-----TC
                                                                                                                                                                                                     ATATAACTÁTTGTGGTCCTTÁCÁCÁAATGTAATAAAAATÁTAÁTTTCTGGTATTAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATCACCGCGACT
CGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATTAC
                                                                                                                                                                                                                                     TCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGCAT 602
                                                                                                                                                                                                                                                                     AAAATAAAATAAGATAATAATAATAATAATGTCTTCTATAATATATGATGAAAAAAATAAA
                                                                                                                                                                                                                                                                                                     AGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAAAT 542
                                                                                                                                                                                                                                                                                                                                        AAATTCAATATCAAAACATATTATAAAAACAGTATTAAATGTAAAAAATATGTTTTTTGA
                                                                                                                                                                                                                                                                                                                                                                                                          TAATAAATATAGACATAATTCAGACAATAATTTATTAAAATATTTAAATAATATTGATAA 39759
                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTAATGTCCCAATAGATTATATGAAAAATAAAAAATTACCCCATTA-CATCTATTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAAAATAATATA 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 62.4; DB 3; Pred. No. 0.016;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 586;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 50000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 69
                                                                                                                                                                                                                                                                                                                                                                              482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              40058
                                                                                                                                                                                                                                                                                                                                              39699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 40118
                                                                                                                                                                                                        39579
                                                                                                                                                                                                                                                                          39639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       39879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 18
PCT-US93-07261-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                  PCT-US93-07261-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 10, Application PC/TUS9307261
GENERAL INFORMATION: PfEMP3 MALARIA
TITLE OF INVENTION: PfEMP3 MALARIA
            Query Match
Best Local Similarity
Matches 551; Conserv
                                                                                                                                                                                                                                                                                                       TELEFAX: 201-822-7039
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
5756 hasm bair
                                                                                                                                                                                                                                                                                                                                                               NAME: Blasdale, John H. C.
REGISTRATION NUMBER: 31,895
REFERENCE/DOCKET NUMBER: DX0288K
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-822-7398
                                                                                                                                                               STRAIN: Malayan Camp
IMMEDIATE SOURCE:
                                                                                                                                                                                                                 MOLECULE TYPE:
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US 07/927,531 FILING DATE: 07-AUG-1992 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: POFILING DATE: 19930805
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: Apple Macintosh 6
OPERATING SYSTEM: Macintosh 6
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Apple Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 2
                                                                                                 NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                             LENGTH: 4766 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Madison
STATE: New Jersey
                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 07940-1000
                                                                                                                                                                                                 ORGANISM:
                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    39278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCATAGGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGAAATACCAAAGCAAATATTGAATCTG-ATGCTGTATTGGAAGCAGATGGAAATATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCTCAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAA
                                                                                                                                                p2b1;p12-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: John H. C. Blasdale
One Giralda Farms
               0.6%;
nilarity 42.7%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USA
                                                                                                3..4766
                                                                                                                                                                                                   Plasmodium
                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                CDNA to mRNA
                                                                                                                                                                                                                                                                   double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PfEMP3 MALARIA ANTIGEN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PCT/US93/07261
                                                                                                                                                                                                 falciparum
                                                                                                                                                                                                                                                                                                                                    10:
                 0
                                Score 62.2; DB 6; Length 4766; Pred. No. 0.0083;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6.0.5
                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ANALOGS, ANTIBODIES
                 Indels
                 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    39109
                 Сарв
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AND USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    39219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      39279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   39339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    836
                 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  THEREOF
                                                          Ś
                                                                                                밁
                                                                                                                             Ś
                                                                                                                                                             밁
                                                                                                                                                                                            á
                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
S
                              밁
                                                                                                                                9219
                                                                                                                                                                 3263
                                                                                                                                                                                                                                                               9105
                                                                                                                                                                                                                                                                                                3143
                                                                                                                                                                                                                                                                                                                                9045
                                                                                                                                                                                                                                                                                                                                                                 3083
                                                                                                                                                                                                                                                                                                                                                                                                   8985
                                                                                                                                                                                                                                                                                                                                                                                                                                  3023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAÁGTAACTAATAAAGCÁCGCGÁÁÁÁÁTCTAGAÁGÁATATAATGAÁÁCTGATTTÁGCAAA
AGTTAGTGTAAAGAATCAAATAAATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAA 9398
                                                                                                                                                                                              CAATATCGAATGTACACATTTCCAATGAGATG--GATATTAAAAATTTGGCAAAGCAGTA 9218
                                                                                                                                                                                                                                                                                                                                                                                                                                  TARAGAATTACGAAATAAAGGATCTGAAGGATTAAAAGAAAATGCAGAATTAAAAAATAA 3082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAAAGCACGCGAAAATCTAGAAGAATATAATGAAACTGATTTAGCAAAAGGTAAGGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTC
                                                               TGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGAC 933
                                                                                                                         TGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATTACTTTAGCATCAAGTAG
                                                                                                                                                                 ACAAAATAAAGGATCTGAAGGATTAAAAGAAAATGCAGAATTAAAAAATAAAGAATTACA
                                                                                                                                                                                                                                                                                                 ATTACGAAATAAAGGATCTGAAGGATTAAAAGAAATGCAGAACTAAAAAATAAAGAATT 3202
                                                                                                                                                                                                                                                                                                                                                                 AGAATTACGAAATAAAGGATCTGAAGGATTAAAAGAAAATGCAGAGCTAAAAAATAAAGA 3142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGGAAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAAC 8924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ĀĀĀĀĀTĀĀĀĢĀĀTTĀCĢĀĀĀTĀĀĀĢĢĀTCTĢĀTĢĢATTĀĀĀĀĢĀĀĀĀTGCAGAGCTĀĀĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGAGTCAACGGAGACCGAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGGAGTACTACAGGAGCATTGGT 8744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACTAATAAAGCACGCGAAAATCTAGAAGAATATAATGAAACTGATTTAGCAAAAAGGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACGAGATCAAACAAGTTAACTTCTACAACTGTA-AATGGAGGAAACGTATCTCAACTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATAGAATCTTTAGCGGTAGCCGGTGTGCATGCACAAG-----GAACAAACAAAGCATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACGCGAAAATCTAGAAGAATATAATGAAACTGATTTAGCAAAAGGTAAGGAAGTAACTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAATCTAGAAGAATATAATGAAACTGATTTAGCAAAAGGTAAGGAAGTAACTAATAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAGAATATAATGAAACTGATTTAGCAAAAGGTAAGGAAGTAACTAATAAAGCACGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTAGTATCAGGAAATGGAGGAAGTGCCGGAGCAGGAGTGAATACTTCTACAGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATATAATGAAACTGATTTAGCAAAAGGTAAGGAAGTAACTAATAAAGCACATGAAAATCT
                              AGGATCTGATGGATTAAAAGAAAATGCAGAGCTAAAAAATAAAGAATTACGAAATAAAGG
                                                                                                TAAAGGATCTGAAGGATTAAAAGAAAATGCAGAATTAAAAAAATAAAGAATTACGAAATAA
                                                                                                                                                                                                                                                               ATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAG----CTG
                                                                                                                                                                                                                                                                                                                               <u>AGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGC</u>
                                                                                                                                                                                                                                                                                                                                                                                                TGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATAAAGAATTACGAAATAAAGGATCTGATGGATTAAAAGAAAATGCAGAGCTAAAAAA 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATGAAAAATAATGAATTACAAAATAAAGGATCTGATGGATTAAAAAGAAAATGCAGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGTAAGGAAGTAACTAATAAAGCACGCGAAAATCTAGAAGAATATGAAGAAAAAAGATTA
                                                                                                                                                                                                                                  3262
                                                                                                                                                                                                                                                                                                                                9104
                                                                                                 3382
                                                                                                                                                                 3322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2542
```

```
GENERAL INFORMATION:
APPLICANT: VENTER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASS
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF
FILE REFERENCE: CLOO1307
CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT FILING DATE: 2000-04-14
PRIOR APPLICATION NUMBER: 60/241,755
PRIOR FILING DATE: 2000-10-20
PRIOR PILING DATE: 2000-10-03
PRIOR APPLICATION NUMBER: 60/237,768
PRIOR FILING DATE: 2000-09-08
NUMBER OF SEQ ID NOS: 207012
SOFTMARE: PASISEQ for Windows Version 4.0
SEQ ID NO 12147
LENGTH: 767877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                    ; FEATURE:
, NAME/KBY: misc feature
; LOCATION: (1)...(767677)
; OTHER INFORMATION: n = A,T,C
US-09-949-016-12147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 19
US-09-949-016-12147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                          გ
밁
                    श्
                                                       밁
                                                                                á
                                                                                                                  밁
                                                                                                                                             Ś
                                                                                                                                                                       밁
                                                                                                                                                                                                    5
                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                 र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 12147, Application US/09949016 Patent No. 6812339
                                                                                                                                                                                                                                                                                                                                                         Query Match 0.6%;
Best Local Similarity 46.5%;
Matches 200; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
                                                                                                                                                                             343556
                                                                                                                                                                                                                                                                                                343436 ATAATGGTAATGGTGATAATGAAGACGATGGTGGTGATGAAGATGATGGTGGTGATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9399 AACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTATAATATATAAGAC 9458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATTGAAAAAATGAAGTAAAATTTAATAAT 9549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TADAGATTTATCTAATAAAGACATGAAAAATAAAGAACTATTAAACAAAGATATTTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ANATTCTANGGCTATTGCGGATGCCANANGTCATGCTGCAGCTGCTTCGGCAACTGCCAC 9518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAAGGATTAAAAGAAATGTATATACAAATAATGATTTAAAGAATAACGATATTCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCTGATGGATTAAAAGAAATGCAGAATTAAAAAATAAAGAATTACGAAATAAAGGATC
                                                                                                                                                                                                                                                                                                                            ATTCAGCTATCGTAGAAGCTAAAGAAAAAGCTGAATTATCAGGAGAAAATATTAATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAAAGACATGAAGAATAAAGAACTATTAAAT 3653
                                                                                                                                                ACGAAGCATATTTGAAAGCTAATAAAAAAATTGCTTTAAACAGTAAGAATGATACTTCTG
                                                                                                                                                                             CAATCAATGGAATGGGAAGTTATAGTGGAGGTATCAGTAAGGCAAGAGTTTCCATTGATG
                                                                                                                                                                                                                                        ATGCATTGAACAGACTTTTTCATGTAGCGGGATCTTTTAATGGTGGCTCAGGTGGGAATG
 TTGCGGTAAATGATTATGATATTTCAAACAAAGCTTCCATTGAAGATAATGACGAAGGAC 3208
                                                          TTTGGAATGCTGCCGGTTCAGCGGGAATCGGAACGAAAAATGCGGCGGTCGGGGTTGCTG
                                                                                                                    <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                     ဝူ
                                                                                                                                                                                                                                                                                                                                                            Score 62; DB 3; Le
Pred. No. 0.048;
0; Mismatches 230;
                                                                                                                                                                                                                                                                                                                                                                                                                                       G
                                                                                                                                                                                                                                                                                                                                                                                        Length 767677;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ASSOCIATED OF DETECTION AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                            ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3502
                                                                                                                                                   3088
                                                                                                                                                                                                              3028
                                                                                                                                                                                                                                                                       2968
                                                                                         3148
                                                                                                                                                                                                                                                                                                                                  2908
                                                            343735
                                                                                                                                                                                343615
                                                                                                                                                                                                                                         343555
                                                                                                                                                                                                                                                                                                    343495
                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                      밁
                                                                                                                                  გ
                                                                                                                                                                  밁
                                                                                                                                                                                         Ś
                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                 닭
                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
            Ś
                                                밁
                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 200;
                                                                                                         343736
                                                                                                                                                                    343676
```

```
CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT FILING DATE: 2000-04-14
PRIOR APPLICATION NUMBER: 60/241,755
PRIOR FILING DATE: 2000-10-20
PRIOR APPLICATION NUMBER: 60/237,768
PRIOR APPLICATION NUMBER: 60/237,768
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR FILING DATE: 2000-09-08
PRIOR FILING DATE: 2000-09-08
PRIOR FILING DATE: 2000-09-08
PRIOR FILING DATE: 2000-09-08
SOFTWARE: FASESEQ FOR WINDOWS Version 4.0
SSEQ ID NO 17361
LENGTH: 767677
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-949-016-17361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-949-016-17361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: VENTER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND
FILE REFERENCE: CL001307
FILE REFERENCE: CL001307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 17361, Ap
Patent No. 6812339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Human
FEATURE:
FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(767677)
OTHER INFORMATION: n = A,T,C or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               343856 GTGGTGAAGA 343865
343856
                                                                                                                                                                                                                                                                                                                                                                                                                                        343436 ATAATGGTAATGGTGATAATGAAGACGATGGTGGTGATGAAGATGATGGTGGTGATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2849 ATTCAGCTATCGTAGAAGCTAAAGAAAAAGCTGAATTATCAGGAGAAAATATTAATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2909 ATGCATTGAACAGACTTTTTCATGTAGCGGGATCTTTTAATGGTGGCTCAGGTGGGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAGATGCAAA 3278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAGTAAATATGATAAGAATAAAGATGATGATGAGTAACAGTAACTGCGGAATCTTTAGAAG 3268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAATCAATGGAATGGGAAGTTATAGTGGAGGTATCAGTAAGGCAAGAGTTTTCCATTGATG
  GTGGTGAAGA 343865
                                           TAGATGCAAA 3278
                                                                                                                   AAAGTAAATATGATAAGAATAAAGATGATGATGAAGTAACTGCGGAATCTTTAGAAG 3268
                                                                                                                                                                            TTGCGGTAAATGATTATGATATTTCAAACAAAGCTTCCATTGAAGATAATGACGAAGGAC 3208
                                                                                                                                                                                                                                                                тттванатестессесттенесесенатесенананатесевсестесте
                                                                                                                                                                                                                                                                                                                                                    ACGAAGCATATTTGAAAGCTAATAAAAAAATTGCTTTAAACAGTAAGAATGATACTTCTG
                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Application US/09949016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.6%;
46.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 62; DB 3; Length 767677; Pred. No. 0.048;

۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2908
                                                                                             343855
                                                                                                                                                                                                                                                                                                                3148
                                                                                                                                                                                                                                                                                                                                                           343675
                                                                                                                                                                                                                                                                                                                                                                                                      3088
                                                                                                                                                                                                                                                                                                                                                                                                                                               343615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   343559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         343495
                                                                                                                                                                                 343795
                                                                                                                                                                                                                                                                     343735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
Ś
                                                                                   밁
                                                                                                                      Ś
                                                                                                                                                                 밁
                                                                                                                                                                                                   á
                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 21
US-08-072-610-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-072-610-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1, Application US/08072610
Patent No. 5532133
GENERAL INFORMATION:
APPLICANT: Barnwell, John
                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                       Matches 456;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
LENGTH: 3337 base pairs
TYPE: NUCLEIC ACID
TYPE: NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: Gogoris, Adda
REGISTRATION NUMBER: 29,714
REFERENCE/DOCKET NUMBER: 598
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)527-7700
TELEFAX: (212)753-6237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
TOPOLOGY: line
MOLECULE TYPE: I
HYPOTHETICAL: N
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IMMEDIATE SOURCE:
CLONE: PVMB3.3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC COMPUTER-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGINAL SOURCE:
ORGANISM: Pla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/072,610 FILING DATE: 19930602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Barnwell, TITLE OF INVENTION: TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: (212,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                              5932
                                                                                                                            5872
                                                                                                                                                                                                   5812 AAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAAT
                                                                                     684
                                                                                                                                                                   624
                                                                                                                                                                                                                                              564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10022-7513
                                                                                                                                                               GAAACTGGCGATTTGGAAGCAGGGGAAGAAGCTGGTGATTTGGAAGCAGGGGAAGAAACT
                                                                                                                                                                                                                                            GGGGAAGAAGCTGGTGATTTGGAAGCAGGGAAGAAACTGGCGATTTGGAAGCAGGGGAA
                                                                                                                                                                                                                                                                             GGAATTGGAGCTGGAGCTGGAGCTGGAGGAGCTGACAGGTTCTGTAGCAGTGAAT
                                                                                                                                                                                                                                                                                                                        ACAGAAGAAGGACTACCTGGTGATATGGAAGGAGGAAGAAGAAGCTGGCGATATGGAAGCA
                                                                                                                                                                                                                                                                                                                                                              GATGCGGAAACTGAAAATGGAGCAACTGTGTATGTAGACACAGAAGATAGTTCAGCTGAT 803
                                        GTGGCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAA---TGAAATTACAGGATCTACA 598
                                                                                   GGCGATTTGGAAGCAGGGGAAGAAACTGGAGATGCGGAAACTGAAGAAGGAGCAACTGGA
                                                                                                                        GTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGA 5931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E: Darby and Darby 805 Third Ave.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              double
                                                                                                                                                                                                                                                                                                                                                                                                                     0.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Monoclonal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Plasmodium vivax Blood Stage Antigens, Monoclonal Antibodies, and Diagnostic Assays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            vivax
                                                                                                                                                                                                                                                                                                                                                                                                 Score 61; DB 2; Length 3337; Pred. No. 0.013; Indels 0; Mismatches 615; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5986/07686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #1.25
                                                                                                                                                                                                                                                                                   5811
                                                                                                                                                                                                     587
                                                                                   743
                                                                                                                                                                 683
                                                                                                                                                                                                                                            623
                                                                                                                                                                                                                                                                                                                        563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                          RESULT 22
US-08-719-822B-1
                                                                                                                                                                                                                                                                                                 Sequence 1, Application US/08719822B Patent No. 5874527
                                                                                                                                                                                                                                          GENERAL INFORMATION:
APPLICANT: Barnwell,
TITLE OF INVENTION:
COUNTRY: USA
ZIP: 10022-7513
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: Darby and
                                                                                                                                                                                                                        NUMBER OF SEQUENCES:
                                                                                                                          STATE:
                                                                                                                                          CITY: New York
                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1044 GATGCCACTCCAGAGGATGACTTCGCATTAGATGTTACAGAATCTCCCGAGGAAGTAGAA 1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5989 AAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTATATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAGCAGAAAAAGTACATGTTCCTGCTCAAGAAATGTACAACCTGCCGATAGTAATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGAAGAGTTAGAGGCAACTCCAGAGGATGACTTCCAATTAGAAGAACCATCAGGAGAA 1523
                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGGGAGAAGAAACCGTAGAGGGAGAAGAAACCGTAGAGGGAGAAGAAGCTGCAGAAGGA 1463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGA 6585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTATCAGAAGAAACTCCAGAAGGAGAAGAAGAGTTAGAGGCAACTCCAGAGGATGATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTAGGTTCTGTTGGTGGTGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATATT 6405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTA 6345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGAĀACCTGTĀCCĀTTĀCCĀGTGGCĀGĀĀGĀGĀGCCCGCGCĀGTĀCCĀGCGGĀĀGĀĀTTĀ 1043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCACTATTCGAACAAATTGTGGCGGGTACTGCTAAACATGTTACGGGACAAGAATTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAGGATTTGTTACCAATAGTTCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCCTCTTTGGAAGTATTTTGGATAAAGATATAATTTTTGATCATATTAAAGATTTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New York
                                                                                                                                                                                                                                                                                                                                                                                                                       GGAGAAGGGGAAGGAGAAGGAGAAGGGAGAAGGAGAAGCGTTAGTAGCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCT 6705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGACGGAAGTAGATGTGGAAGAAGCAAAGATTTTGGTAAAAAAAGCTGAGATTACAGCA 6645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCATTAGATGGAACTACATTAGAAGAAACCGAAGAAACTGCAGAAGGAGAAGAAACCGTA 1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTC 6525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATAAAAAGAAATACCAAGACAAGAGTTGGAAAAACTTACAATGTCTGATGAAGGTTTCGGA 6465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTAGTATTAGATGAAGAGGCAACTGAAGAAGAATCAACGGAAGTGGGACCAACGGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAG---TG
                                                                                                                                                             E: Darby and Darby
805 Third Ave.
                                                                                                                                                                                                                                          Plasmodium
                                                                                                                                                                                                                                            vivax Blood
                                                                                                                                                                                                                                          Stage Antigens
```

983 6168 863 6048

923

```
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 3337 base pairs
TYPE: nucleic acid.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGINAL SOURCE:
ORGANISM: Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Gogoris, Adda
REGISTRATION NUMBER: 29,714
REFERENCE/DOCKET NUMBER: 59;
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)527-7700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA: APPLICATION UMBER: US/08/719,822B FILING DATE: 09/30/96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE: (214,--
TELEPHONE: (212)753-6237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLONE: PvMB3.3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6049 ACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATATTAACGAA 6108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               624 GAAACTGGCGATTTGGAAGCAGGGGAAGAAGCTGGTGATTTGGAAGCAGGGGAAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGA 5931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAAATCACTGCGAAGGGAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGGAAGAAGCTGGTGATTTGGAAGCAGGGGAAGAAACTGGCGATTTGGAAGCAGGGGAA 623
                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAGAACAGATGATTATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGCGGAAACTGAAAATGGAGCAACTGTGTATGTAGACACAGAAGATAGTTCAGCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGGCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAA---TGAAATTACAGGATCTACA 5988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAATTGGAGCTGGAGTTGGAGCTGGAGGTGACAGGTTCTGTAGCAGTGAAT 5811
ATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTA 6345
                                              GATGCCACTCCAGAGGATGACTTCGCATTAGATGTTACAGAATCTCCCGAGGAAGTAGAA 1103
                                                                                                                                                                                                                                                                     GACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAAGGATTTGTTACCAATAGTTCAGCT 6168
                                                                                                                                                                                                                                                                                                            GCCCTCTTTGGAAGTATTTTGGATAAAGATATAATTTTTGATCATATTAAAGATTTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                       GGAGCAGAAAAAGTACATGTTCCTGCTCAAGAAAATGTACAACCTGCCGATAGTAATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCGATTTGGAAGCAGGGAAGAAACTGGAGATGCGGAAACTGAAGAAGGAGCAACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAGAAGAAGGACTACCTGGTGATATGGAAGGAGAAGAAGAAGCTGGCGATATGGAAGCA 563
                                                                                      GCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCT
                                                                                                                                                                              ACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAG---TG 6225
                                                                                                                                                                                                                           CCACTATTCGAACAAATTGTGGCGGGTACTGCTAAACATGTTACGGGACAAGAATTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               236687
                                                                                                                                  ATGAAACCTGTACCATTACCAGTGGCAGAAGAGCCCGCGCAAGTACCAGCGGAAGAATTA 1043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.6%;
ilarity 42.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 vivax
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5986/17686US2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ,
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 61; DB 2; Length 3337; Pred. No. 0.013; O; Mismatches 615; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6
                                                                                                                                                                                                                           983
                                                                                                                                                                                                                                                                                                                                                                                                       863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 23
US-09-092-458-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/09092458 Patent No. 6231861
                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: PATENTIN PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATION SYSTEM: PC-DOS/MS-DOS
COMPUTER: PATENTIN APPLICATION DATA:
APPLICATION NUMBER: US/09/092,458
FILING DATE:
CLASSIFICATION DATA:
APPLICATION NUMBER: 08/719,821
APPLICATION NUMBER: 09/30/96
ATTORNEY/AGENT INFORMATION:
NAME: G90718, Adda
REGISTRATION NUMBER: 29,714
REFERENCE/DOCKET NUMBER: 5986/176861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: Barnwe
                                         TELEX: 236687
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
LENGTH: 3337 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                         TELECOMMUNICATION INFORMATION: TELEPHONE: (212)527-7700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
  TYPE: nuclei
STRANDEDNESS:
                                                                                                                                       TELEFAX:
                                                                                                                                                       TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1104 TTAGTATTAGATGAAGAGGCAACTGAAGAAGAATCAACGGAAGTGGGACCAACGGAAGAA
    nucleic acid
)EDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGACGGAAGTAGATGTGGAAGAAGCAAAGATTTTGGTAAAAAAAGCTGAGATTACAGCA 6645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCT 6705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATCAGAAGAAACTCCAGAAGGAGAAGAAGAGTTAGAGGCAACTCCAGAGGATGATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATAAAAGAAATACCAAGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGTTTCGGA 6465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTAGGTTCTGTTGGTGGTGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATATT 6405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTG 6762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGAAGAGTTAGAGGCAACTCCAGAGGATGACTTCCAATTAGAAGAACCATCAGGAGAA 1523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGGGAGAAGAACCGTAGAGGGAGAAGAAACCGTAGAGGGAGAAGAAGCTGCAGAAGGA 1463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGA 6585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAGGAGAAACAGAAACGTAGAGGGAGAAGAACAGAAGAAGCTGCAGAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E: Darby and Darby 805 Third Ave.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                       (212) 753-6237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Plasmodium vivax Blood Monoclonal Antibodies,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               John
                                                                                                                                                                                                        5986/17686US3
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Stage Antigens, and Diagnostic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Авваув
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1343
```

밁 5 片 S 밁 S

684

5812

564

5752

504

Query Match Best Local Sim: Matches 456;

-08-719-822B-1

TOPOLOGY:

S 밁

6169

6109

864

S 밁 Ś 밁 ई 밁 S 밁 밁 8 밁 S

```
믕
                                Ś
                                                                   밁
                                                                                              S
                                                                                                                                     밁
                                                                                                                                                                S
                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-092-458-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 456;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY: linear MOLECULE TYPE: DNA (HYPOTHETICAL: NO ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IMMEDIATE SOURCE:
CLONE: PVMB3.3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGINAL SOURCE:
ORGANISM: Plasmodium
   1344
                                                                                                                                                                                                           1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5932
                                                                     1284
                                                                                                                                                                                                                                                                                                                                                1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                  6169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       h 0.6%;
Similarity 42.3%;
56; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAACTGGCGATTTGGAAGCAGGGGAAGAAGCTGGTGATTTGGAAGCAGGGGAAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACAGAAGAAGGACTACCTGGTGATATGGAAGGAAGGAAGAAGCTGGCGATATGGAAGCA
GCATTAGATGGAACTACATTAGAAGAAACCGAAGAAACTGCAGAAGGAGAAGAAACCGTA
                              GCAGCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGA
                                                                 GTATCAGAAGAAACTCCAGAAGGAGAAGAAGAAGTTAGAGGCAACTCCAGAGGATGATTTC
                                                                                                   GAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTC
                                                                                                                                     ATAAAAAGAATACCAAGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGTTTCGGA
                                                                                                                                                                                                       GTAGGTTCTGTTGGTGGTGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATATT
                                                                                                                                                                                                                                                                         TTAGTATTAGATGAAGAGGCAACTGAAGAAGAATCAACGGAAGTGGGACCAACGGAAGAA
                                                                                                                                                                                                                                                                                                           ATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTA
                                                                                                                                                                                                                                                                                                                                             GATGCCACTCCAGAGGATGACTTCGCATTAGATGTTACAGAATCTCCCGAGGAAGTAGAA 1103
                                                                                                                                                                                                                                                                                                                                                                               GCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                ATGABACCTGTACCATTACCAGTGGCAGAAGAGCCCGCGCAAGTACCAGCGGAAGAATTA 1043
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAG---TG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCACTATTCGAACAATTGTGGCGGGTACTGCTAAACATGTTACGGGACAAGAATTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACTTATCACAAAAAAGAAAATAAGTAATAAAAAAAGGATTTGTTACCAATAGTTCAGCT 6168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCCTCTTTGGAAGTATTTTGGATAAAGATATAATTTTTGATCATATTAAAGATTTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATATTAACGAA 6108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAGCAGAAAAAGTACATGTTCCTGCTCAAGAAAATGTACAACCTGCCGATAGTAATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAGAACAGATGATTATATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATGCGGAAACTGAAAATGGAGCAACTGTGTATGTAGACACAGAAGATAGTTCAGCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGGCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAA----TGAAATTACAGGATCTACA 5988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGCGATTTGGAAGCAGGGGAAGAAACTGGAGATGCGGAAACTGAAGAAGGAGCAACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGGAAGAAGCTGGTGATTTGGAAGCAGGGGAAGAAACTGGCGATTTGGAAGCAGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAATTGGAGCTGGAGCTGGAGCTGGAGGAGCTGACAGGTTCTGTAGCAGTGAAT 5811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 61; DB 3; Le
Pred. No. 0.013;
0; Mismatches 615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 3; Length 3337;
0.013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
1403
                                6585
                                                                 1343
                                                                                                   6525
                                                                                                                                                                                                       1223
                                                                                                                                                                                                                                         6405
                                                                                                                                                                                                                                                                           1163
                                                                                                                                                                                                                                                                                                           6345
                                                                                                                                                                                                                                                                                                                                                                             6285
                                                                                                                                                                                                                                                                                                                                                                                                                                                6225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     563
                                                                                                                                     1283
                                                                                                                                                                       6465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        863
```

```
밁
                      S
                                                             밁
                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 24
US-08-719-821C-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ğ
                                                                                                                                                                                                     US-08-719-821C-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                    Matches
                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Application US/08719821C Patent No. 6706872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, V
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/719,821C
FILING DATE: 09/30/96
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: (212)527-7700
TELEPAX: (212)753-6237
TELEX: 236687
INFORMATION FOR SEQ ID NO: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
NAME: GOGOTIS, Adda
REGISTRATION NUMBER: 29,714
REFERENCE/DOCKET NUMBER: 5986/17686US3
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                  ANTI-SENSE: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                     IMMEDIATE SOURCE:
CLONE: PVMB3.3.1
                                                                                                                                                                                                                                                                                                    MOLECULE TYPE:
HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 3337 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                        ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: New York
STATE: New Yor
                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1404 GAGGGAGAAGAAACCGTAGAGGGAGAAGAAACCGTAGAGGGAGAAGAAGCTGCAGAAGGA 1463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6586 AAGACGGAAGTAGATGTGGAAGAAGCAAAGATTTTGGTAAAAAAAGCTGAGATTACAGCA 6645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'RY: USA
10022-7513
                                                                                                                                                                                                                                                                                                                                                                       nucleic acid
                             GGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTGTAGCAGTGAAT 5811
                                                               ACAGAAGAAGGACTACCTGGTGATATGGAAGGAGGAGAAGAAGCTGGCGATATGGAAGCA 563
GGGGAAGAAGCTGGTGATTTGGAAGCAGGGGAAGAAACTGGCGATTTGGAAGCAGGGGAA 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAGAAGATTAGAGGCAACTCCAGAGGTGACTTCCAATTAGAAGAACCATCAGGAGAA 1523
                                                                                               AAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCT 6705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     805 Third Ave
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Barnwell,
                                                                                                                                  Conservative
                                                                                                                                                                                                                                                    Plasmodium
                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Darby and Darby
                                                                                                                                                                                                                                                                                                       ĕ
                                                                                                                                                                                                                                                                                                                     DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                         double
                                                                                                                                                0.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Monoclonal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       John
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/08/719,821C
                                                                                                                                                                                                                                                        vivax
                                                                                                                                                                                                                                                                                                                                                                                                                            <u>..</u>
                                                                                                                                0
                                                                                                                                                  Score 61; DB 3;
Pred. No. 0.013;
                                                                                                                                  Mismatches 615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    vivax Blood Stage Antigens, Antibodies, and Diagnostic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  井
                                                                                                                                                                Length 3337,
                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Assays
                                                                                                                                ٠.
ص
                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6762
```

```
RESULT 25
US-09-754-947-2
; Sequence 2, App
; Patent NO. 6821
; GENERAL INFORM
; APPLICANT: Lee
; APPLICANT: F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            음 성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                 밁
                                                                                                                                                                                               Ş
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                          S
   Sequence 2, Application US/097:
Patent No. 6828110
GENERAL INFORMATION:
APPLICANT: Lee, Bruce Andrew
APPLICANT: Flores, Becky Mar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5812
                                                                                                                                                                                                                                     1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCACTATTCGAACAAATTGTGGCGGGTACTGCTAAACATGTTACGGGACAAGAATTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCCTCTTTGGAAGTATTTTGGATAAAGATATAATTTTTGATCATATTAAAGATTTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTTATTCAAAAAATCTTAATATTAACGAA 6108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAĞCAGAAAAAGTACATGTTCCTGCTCAAGAAAATGTACAACCTGCCGATAGTAATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ANAGCATATGTAANAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATGCGGAAACTGAAAATGGAGCAACTGTGTATGTAGACACAGAAGATAGTTCAGCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGGCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAA---TGAAATTACAGGATCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCGATTTGGAAGCAGGGAAGAAACTGGAGATGCGGAAACTGAAGAAGGAGCAACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAACTGGCGATTTGGAAGCAGGGGAAGAAGCTGGTGATTTGGAAGCAGGGGAAGAAACT
                                                                                                                                                                                                                                                                                                                                  AAGACGGAAGTAGATGTGGAAGAAGCAAAGATTTTGGTAAAAAAAGCTGAGATTACAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATAAAAAGAAATACCAAGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGTTTCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTAGGTTCTGTTGGTGGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGCCACTCCAGAGGATGACTTCGCATTAGATGTTACAGAATCTCCCGAGGAAGTAGAA 1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAG---TG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACTTATCACAAAAAAGAAAAATAAGTAATAAAAAGGATTTGTTACCAATAGTTCAGCT
                                                                                                                                                                                                  GGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTG 6762
                                                                                                                                                                                                                                                                         AAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCT 6705
                                                                                                                                                                                                                                                                                                            GAGGGAGAAGAACCGTAGAGGGAGAAGAACCGTAGAGGGAGAAGAAGCTGCAGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                  GTATCAGAAGAAACTCCAGAAGGAGAAGAAGAAGTTAGAGGCAACTCCAGAGGATGATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAGTATTAGATGAAGAGGCAACTGAAGAAGAATCAACGGAAGTGGGACCAACGGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>ATGAAACCTGTACCATTACCAGTGGCAGAAGAGCCCGCGCAAGTACCAGCGGAAGAATTA</u>
                                                                                                                                                                                                                                     GAAGAAGAGTTAGAAGCAACTCCAGAGGATGACTTCCAATTAGAAGAACCATCAGGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                GCAGCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAGGAGAAACAGAAACGTAGAGGGAGAAGAAACAGAAGAAGCTGCAGAAGGAGAA
                                                                                                                                                                 ĠĠĀĠĀĀĠĠĠĀĀĠĠĀĠĀĀĠĠĀĠĀĀĠĠĠĀĀĠĠĀĠĀĀĠĠĀĠĀĀĠĊĠŦŦĀĠTĀĠĊĀĠŦĠ
                                                                          US/09754947
                                                                                                                                                                     1580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               923
```

```
CURRENT APPLICATION NUMBER: US/09/754,947
CURRENT FILING DATE: 2001-01-04
PRIOR APPLICATION NUMBER: US 60/174,901
PRIOR FILING DATE: 2000-01-06
NUMBER OF SEQ ID NOS: 5
SOFTWARE: PALENTIN Ver. 2.1
SEQ ID NO 2
LENGTH: 2370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; OTHER INFORMATION:
US-09-754-947-2
                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                         Ş
                                                                 맑
                                                                                            S
                                                                                                                                   뫄
                                                                                                                                                                   Ş
                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Valkirs, Gunars Edwin
APPLICANT: Biosite Diagnostics, Inc.
TITLE OF INVENTION: Assays for Detection
FILE REFERENCE: 014907-003310US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
ORGANISM: Bacillus
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5352 ARARATATCAATGTGACTGCAARAGATTATACTATGACCAATACTATAGCAGTCGGAGT
                                                                                                                                                                                                                                                                                                                                                  1386
                                                                                                                                                                                                                                                                                                                                                                                                                        1326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1206
1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ---TTACGAAGGCGACAACGCTTACGTTCAAGTAGAATTGAAAGATCAATTTAACGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAATAAGGAAAAGGCAAATGTTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGTAAAGAAGTTAAAAGTTTCTGCTGAAGGTGCTGCAGTAGCTTCAATCTCTAACTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGAGGAGCAAAAGGAGCTCTGTGCAAGGAGCTTCTGCAAGTACCTTGAATAAGAC
 TCCAGGTGCATTCTCTAAATTTGAAGTTCGTGGTTTAGACACAGAATTAGATAAATATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACAACTGGAAAAGTTGAATATGAGTCGTTAAACACAGAAGTTGCTGGTAGTAGATAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAAGGTACTTCAACTACTGTAAAAGCTGTTTATAAAAAAAGACGGTAAAGTAGTAGCTGA
                             GGTAGATAAAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAAAT
                                                                                                  AGTGATTGCTAAAGAAGAAACAGATGATTATATTACTACTCAAGGGCAAGTAGATAAAGT
                                                                                                                                        TGTGAACAGAGAATTAGTTCTGAATGCAGCAGGTCAAGAAGCTGGTAATTATACAGTTGT
                                                                                                                                                                       AGCCTCAACCAGTGTGAAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTAC
                                                                                                                                                                                                            AGTGAAAĠTĀCTTĠATĀĀAGĀTĠGTAĀĀGAĀTTĀĀĀĀGĀĀCĀĀĀĀATTĀĞĀĀĠČTĀĀĀTĀ
                                                                                                                                                                                                                                     TGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCCGTGCAGCAATAGG
                                                                                                                                                                                                                                                                               TTTANAAGTAAAAGCTCCAGTACTAGATCAATACGGTAAAGAGTTTACAGCTCCTGTAAC
                                                                                                                                                                                                                                                                                                              AGCAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTC
                                                                                                                                                                                                                                                                                                                                                    AATGAAAGACATTAAATTAGAAAAAACTAACGTAGCGCTTTCTACAAAAGATGTAACAGA
                                                                                                                                                                                                                                                                                                                                                                               agctggaggagctggagtgacaggttctgtagcagtgaataagattgtaaataatacgat
                                                                                                                                                                                                                                                                                                                                                                                                                        TTCAAAAGGTAAAGCACTTGTTTCACACACAGTTGAAATTGAAGCTTTCGCTCAAAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTGGTAAAAAGCAAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACTGGTAAAGTAACTGTATTATCTGCAGGAAAAAGCACCAGTAAAAGTAACTGTAAAAAGA
                                                                   ATTAACTGCAAAATCTGGTGAAAAAGAAGCAAAAGCTACATTAGCTCTAGAATTAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0.6%;
nilarity 41.2%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             anthracis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          surface array
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 60.2; DB 3;
Pred. No. 0.017;
0; Mismatches 713;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacillus Anthracis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       713;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5531
                                    6131
                                                                        1685
                                                                                                           6071
                                                                                                                                                                             6011
                                                                                                                                                                                                                                                                                                                     5891
                                                                                                                                                                                                                                                                                                                                                        1445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1088
                                                                                                                                            1625
                                                                                                                                                                                                                                                                                    1505
```

```
RESULT 26
US-08-559-896B-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Application US/08559896B Patent No. 6310046
               TELEPAX: (301) 619-7714
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1956 base pairs
                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Ploppy disk
COMPUTER: Apple Macintosh
OPERATING SYSTEM: Macintosh 7
SOFTMARE: Microsoft Word
CURRENT APPLICATION DATA:
                                                                                                     ATTORNEY/AGENT INFORMATION:
NAME: MOTAIN, JOHN
REGISTRATION NUMBER: 26,313
REFERENCE/DOCKET NUMBER:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                     CLASSIFICATION: 514
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Patrick E. Duffy
APPLICANT: Christian F. Ockenhouse
TITLE OF INVENTION: SEQUESTRIN
NUMBER OF SEQUENCES: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE:
                                                                                    TELEPHONE:
                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                        ZIP: 21702-5012
                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: FORT DETRICK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION:
Nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTAGAATTTGTTTCTG 2182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCAGGAACCGTTTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTAAATATCTTATCTGTTGATGGTGTACCTGCGACTACAGCAAAAGCAACAGCTTCTAA 2165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTAGGAGCCGGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGAAAAACTACAATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATCACAACTCATTCAAAAGTTGTTGATACAGCACCAACTGCTAAAAGGATTAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTAGGAGTAGGAGCTTCTTCTGATACCAATATTATAAAAAGAAATACCAAGACAAGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAATCAGGAGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGTGGTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAAAGAAGTAGACGCAACTGATGCACAAGTTACTGTACAAAATAACAGTGTAATTACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTATGGAGAAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TACTGAGGAAAACCAAAAGAATGCAATGACTGTTTCAGTTCTTCCTGTAGATGCAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGTAATAAAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        MARYLAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGTCAAGGTGCAAAAGCTGGTGAGACTTATAAAGTAACAGTTGTACTAGATGGTAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          USA MRMC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               John Moran
A MRMC - M
                                                                                        (301) 619-2065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FREDERICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MCMR-JA
                                                                                                                                                                                                                                                                                            US/08/559,896B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6568
                                                                                                                                                                                                                                                                                                                                                7.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6191
```

```
밁
                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                US-09-351-794A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-351-794A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-559-896B-1
                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Application US/09351794A
Patent No. 6641815
GENERAL INFORMATION:
                                                                                                                                                                                                                    SOFTWARE: PatentIn Ver. SEQ ID NO 1
                                                                       Matches
                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 0.6%;
Best Local Similarity 45.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 222;
                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                            CURRENT APPLICATION NUMBER: US/09/351,794A
CURRENT FILING DATE: 1999-07-13
PRIOR APPLICATION NUMBER: 08/559,896
PRIOR PILING DATE: 1995-11-17
                                                                                                                                                                                                                                                                                                                                                     APPLICANT: DUFFY, PATRICK E.
APPLICANT: OCKENHOUSE, CHRIST!
TITLE OF INVENTION: SEQUESTRIN
FILE REFERENCE: 38644-175519
                                                                                                                                                              LENGTH: 1956
TYPE: DNA
ORGANISM: Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS:
TOPOLOGY: Lir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1512
1392 AGACTATTTTAACAAAGAAATTAAAAAAGACAAAAATGTTAATGTTTCCAATATAGTGAA 1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1392 AGACTATTTTAACAAAGAAATTAAAAAAGACAAAAATGTTAATGTTTCCAATATAGTGAA 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 579
                   459 AGATGATTTTAAGAAGGCTTTGGAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCAT 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          639
                                                                       222;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATAGAAGAATATGTAAAAGGAAATACCAAAGCAAATATTGAATCTGATGCTGTATTGGA 878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGATGATTTTAAGAAGGCTTTGGAAGAAGCCCAAACATGGTAAAGTTTTTAATGGAATCAT 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAATGCTGGÁGÁTÁTÁÁÁCAATGTGGGCGÁTATAAACÁÁTTCTGTÁGATÁTÁCÁACGT 1871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAAAAGGATAACÁCTGAAATGTTAGATAATÁATAAGGAAATAACAAATATTGATATAAA 1631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ÁGTÁGATGTTÓTCAGGAÁÁAATÁÍTCAGAÍTATŤCAAGAÓGÁÍÁAÍÁTÁAAAÁÁTAÁAGG 1571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAACATATAGA 1883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATAAAAAATGTTGATGGTATAAACAATGTGGGAGATATAAACAATGCTGGAGATACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAATGTTGATGATATAAAAAATGTTGGAGATATAAAAAGTGTTGGAGATATAAAAAGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCAATACTAAAGACAGGAATTACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTTTTAAATTCAAAAGTAGGAAAAGATAACACACCAATTCAACATAAGAAGGAAAATCA 1511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGGGAAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCAGCTCACATAGATTCTCCTCAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAG 818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAATTCTGGTCTGACCGGAGATTTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCT 758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAAATCAATGCTGTTGAAGGCATCGGTTTATATGCGGCGGATATTAGATTGAAAGATAC 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCAGTAGATGGAAAAGTAAAAATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGATGATATAAACAATGTTGATGGTATAAAAAATGTTGATGGTATAAAAAATGTTGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Linear
                                                                                    0.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               950
                                                                                                                                                                                                                                                                                                                                                                                      CHRISTIAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 60; DB 3;
Pred. No. 0.017;
0; Mismatches 27(
                                                                       <u>.</u>
                                                                                      Score 60; DB 3; Pred. No. 0.017;
                                                                     Mismatches 270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1956;
                                                                                                        Length 1956;
                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>.</u>.
                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1691
```

```
Sequence 22, Application US/09806708B

PATENT NO. 6784342

GENERAL INFORMATION:

APPLICANT: The University of British Columbia

TITLE OF INVENTION: Regulation of Embryonic Tran-
FILE REFERENCE: 4810-58741

CURRENT APPLICATION NUMBER: US/09/806,708B

CURRENT FILING DATE: 2001-04-03

PRIOR APPLICATION NUMBER: US 60/147,133

PRIOR APPLICATION NUMBER: US 60/147,133

PRIOR APPLICATION NUMBER: US 60/147,133

PRIOR FILING DATE: 1999-08-04

NUMBER OF SEQ ID NOS: 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 28
US-09-806-708B-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
В
                                   Ś
                                                                                    밁
                                                                                                                     ঠ
                                                                                                                                                               밁
                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                         US-09-806-708B-22
                                                                                                                                                                                                                                                 Query Match 0.6%; Score 59.4; DB 3; Best Local Similarity 10.4%; Pred. No. 0.019; Matches 80; Conservative 287; Mismatches 405;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn version 3.0 SEQ ID NO 22
                                                                                                                                                                                                                                                                                                                                                         PEATURE:
NAME/KEY: promoter
LOCATION: (1)...(1141)
OTHER INFORMATION: consensus sequence of A.t., L.a.,
                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 1141
TYPE: DNA
ORGANISM: Artificial sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         939
214 BWWKNWSYDVTYYWWVWDDMCKRKVRRWVRTRGRMRNYMVAWBTAHRRRYNNGWTBAMAY
                                                                                                                                                                                                           858 TGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATTAGTGCGAAAGCTACAAA
                                                                                                                                                                   94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATAGAAGAATATGTAAAAGGAAATACCAAAGCAAATATTGAATCTGATGCTGTATTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAATGTTGATGATATAAAAAATGTTGGAGATATAAAAAGTGTTGGAGATATAAAAAGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAAAAGGATAACACTGAAATGTTAGATAATAATAAGGAAATAACAAATATTGATATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCAATACTAAAGACAGGAATTACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAAT 698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTAGATGTTGTCAGGAAAAATATTCAGATTATTCAAGAGGATAATATAAAAAAATAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTTTTÄAÄTTCAAÄÄGTÄGGÄÄÄAÄGATAACÄCAČCAÄTTCAACATÄAGÄAGGAÄAATCA 1511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAACATATAGA 1883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGGGAAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAATGCTGGAGATATAAACAATGTGGGCGATATAAACAATTCTGTAGATATATACAACGT 1871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATAAAAAATGTTGATGGTATAAACAATGTGGGAGATATAAACAATGCTGGAGATACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ттсадстсасатадаттстсстсалаладстатдддалалалаттсалстдттддаладад
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAATTCTGGTCTGACCGGAGATTTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAATCAATGCTGTTGAAGGCATCGGTTTATATGCGGCGGATATTAGATTGAAAGATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCAGTAGATGGAAAAGTAAAAATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGG
                                                                                    MMDKDDKRTRWWWKKONNATGWDDDTKYHMWNNNGCBTVTWMVRYKTDRDWSBKRMNYGM
                                                                                                                   TGGGAGATTTATAAAGAAAGAAGGGGAAAAAGAAACTTATAACACTCCTTTAAGTTTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATGATATAAACAATGTTGATGGTATAAAAAATGTTGATGGTATAAAAAATGTTGATGG
                                          AGATGTGGAAGCTTCCGTAAGAGTAAATAAAGGAAAAGTCATAGGAAAGAATGTTGACAT 1037
                                                                                                                                                                   TSBRYHARRWKDMKTAYBMTMTNKWGKTGWRHRYWRWRAMBDTVDHHYVTAMNNAWTTMC 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Transcription in Plants
                                                                                                                                                                                                                                                       405;
                                                                                                                                                                                                                                                                                               Length 1141;
                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                             and B.n.
                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                           FAE1 promoters
                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 578
                                                                                    213
                                                                                                                              977
```

```
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                              밁
                                                                                                                  Ś
                                                                                                                                                            맑
                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1098
                                                                                                                                                                                                                                                                                                                                                                     1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1158 GACAAGTAAGTCCAGTGTCGTTATTGGAAAAAGATGCCAAAGTCGAAGCAACAGAAGGAAA 1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1038 TACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACTAAGCTTGCAAAGCACTC 1097
                                                                                                                                                                                                                                              634
                                                                                                                                                                                                                                                                                                                            574
                                                                                                                                                                                                                                                                                                                                                                                                             514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RRWTMNNNNNAKAMCKRAKYWGWNRABVNSTCTTWKSKTTKVRTSCWANNCRAGDANKD
                                                                                                                                                                                                                                                                                                                                                                ATATATTTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGAGAAGTAAAATCGAAGGG 1397
                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAATTACCAATTTATATTTGGAGAAAAGCCAATGGAAAACTTCTCAGTATCGGAGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCKWRAWDHKTCTHNNTTWWKMKTYWNNCYWKSMTNGKSHRBAAAVYTWYMWWWRRYAHA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCAAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGAGCAGCTACTTCTCCATT 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HKWWKWSAAMGVYWNNNNNNWTYKKARHBARWDWVWHSAWKKWHANAAHYSRKKWTBYK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTTAGCTTTGTTACAGGTTCTATTTCTCCTATCAATTTAAATGGATTTTTAGGTTTATT 1157
NNNNGWSDMWVTWWAYANYGTNNNNNNNNNAYAWWTNKWYYTTDDRWRBAY
                                        AAGTGAAGCGATTAATTCCATTCGAGCTGCTGTAAAAGGTGGATTGGGGGGAT 1629
                                                                                KWAMRGWHADAAABTTDKRNNGAYTKYTTTNNNNTYRGVVTNTAARDGWANNNNNNNNNN
                                                                                                                                                              WWGCWNNATDTRRTMWKNNNNNNAGTWKNNNNNNAKNASAAKNYAAAAVKAAKKHWRWAN
                                                                                                                                                                                                                                              GAGGS NINNININININININININAT, CARDDYYAAS RWYAMANAKWYYYKBAANNAYYTHAINI
                                                                                                                                                                                                                                                                                  AAGAGCAGATATTACTTCAAAATCTGAAAATACTATTGATGCTTCTGTTTCTGTTGGAAC 1457
                                                                                                                                                                                                                                                                                                                            GRANNYARABHYGYKWNTRWWBWSHTWBHBRAGAAHYWMBMMYBAKCHCMKAWYKAKKYA 633
                                                                                                                                                                                                                                                                                                                                                                                                             NNNNWDYWWKACTWYKYBVCSKWWNNYAAWYTKSSWNYTSRYYRWKTNNSWRWRSDTRSM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RKTMVNNNNGTTMWKRMWAWYWKMDMDWBGTYNNNNNGGRTYYGWTKNKKMWTYYKWKAN
                                                                                                                      TTCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACGGATGATGTAAATGTGAG
                                                                                                                                                                                                    865
                                                                                                                                                                                                                                                  693
                                                                                                                                                                                                                                                                                                                                                                                                                 573
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              333
                                                                                                                              1577
```

```
RESULT 29
US-08-682-517-7
                                                             TOPOLOGY: 1i;
MOLECULE TYPE:
US-08-682-517-7
Query Match
Best Local Similarity
Matches 826; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 7, Application Patent No. 5874267
                                                                                                                                                                        CLASSIFICATION:
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                      SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/682,51
                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                   MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                        LENGTH: 4197 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                       FILING DATE
 Conservative
                                                                                              linear
                                                                          DNA (genomic)
              0.6%;
                                                                                                                                                                                                                                                                                                                                                     Expression of surface layer proteins
                                                                                                                                                                                                                                                                                                                                                                                                                      US/08682517
                                                                                                                                                                                                                          US/08/682,517
                                                                                                                                                                           ..
 0
 Score 59.4; DB 2;
Pred. No. 0.03;
0; Mismatches 1111;
                                                                                                                                                                                                                                                         Version
                                                                                                                                                                                                                                                         #1.30
                               Length 4197;
   Indels
                                                                                                                                                                                                                                                         (EPO)
   30;
   Gaps
```

Ş

5830 ATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAG 5889

1976

```
AATAATATTGCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCTTCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTATCAGGCAAAACATATAAATACTTCGGAGCTAATGGTAATGAAGTATTTGGTGAAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTTATGGAGAAACAGAAGCTCTTGTAGAAATTCTATATTAAATGCAAAACATTATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTGCTAATGATATTAAAGTAGATAACCAAGTTATCTCACCAAATCGTAGCTACACAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGTAACTAAGTTTGATGGTTCTGAAACTGCAGTATTTGCAGCAGAATTAGTAAACCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAGCACCATATCTTGATGGCTCAGCTATCAAAGCATACAAAAAATCAGATCTTAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAAAACAAGGCGACCTTGATGAAGGTGAACCAAAAAGCAGTTGCACCAATCTCTTACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAGCAAAACAAATCTCTGTAAAAAACAAATGATAAAGGTGAAGCTACATTTGTTATCGGT
                                                                               TTAGCTGATGCAGATCTTAATGTAAGTGCAACAACTGTTGATACTGCAACTGTTTCATTA
                                                                                                                                 GGAATCGGTTCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTC
                                                                                                                                                                                    ACACCAGCAGCTGGTGGTTTAGTTGATTTAACAACTGCAACTAACACTTTAGGAATTTCA
                                                                                                                                                                                                                                         TGACTCGAAACAAGT-----TAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACT
                                                                                                                                                                                                                                                                                        GCTATCAAACCAGTTGCTCCAACAACAACAGCAGCTCCAACTACTGGCGCATTAACATTA
                                                                                                                                                                                                                                                                                                                                        GCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGAAAAATTC----TAAAATTA
                                                                                                                                                                                                                                                                                                                                                                                          AATGTAGATGGTGATACAGTTACATTTAAAGTAATTAGTGCTGTTAATTCTTCAACTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                             AA--TTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCATGGGAAGCATTATTAACTCAATATGCAACTGAAGGCCAAAAAGTAACAATCTCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCA----AAGATTTTGGTAAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTGGTTCAAACAGCAACTCTATTTGGTTTGCTGGTAAAAACCCAGTGAAATATGCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTAGGAGCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACAAATGAAGTTCCAAACTCTTACACTGGTGTAGCTACTCAA---TTCAATACAGCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTGGAAAAACTACAATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATACAGACGGTAAAGACTATGCATTTACTGCTAAAGAAGCTACAGCTACATTCACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATGTAGGAGTAGGAGCTTCTTCTGATACCAATATTATAAAAAGAAATACCAAGACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTTACTTCAGTGGATGGTAAAACAACTGCTGTTAAAGTAATTGCTACAGGTATTGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTAAAATCAGGAGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGTGTTGGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTTATGAAGCTACTTTATCTTCTACAGGAACTGTTATTACACCTGCTAAGAATTTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTOGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCGGCAAAAAAGTAACTGGTACTTCTATTAAGAAAGCAACTTATACAATCTACAATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATAAGTAATAAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGGTAGATAAAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGCCTCAACCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTGATACAGTAAACGATTATGCAACACCAATTGCTTGGATTGATATTAATACTTCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              acagtgattgctaaagaagaaacagatgattattattactactcaagggcaagtagataaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6429
                                                                                                                                    6891
                                                                                                                                                                                                                                         6831
                                                                                                                                                                                                                                                                                      2872
                                                                                                                                                                                                                                                                                                                                                                                          2812
                                                                                                                                                                                                                                                                                                                                                                                                                                               6723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                              RESULT 30
US-08-682-517-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                 Sequence 8, Application US/08682517 Patent No. 5874267 GENERAL INFORMATION:
TITLE OF INVENTION: Expression of sunthmar of SEQUENCES: 25
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, V
CURRENT APPLICATION DATA:
                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                     3824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAAGCAGCTGAAAAAGTAAAT 7611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTAGCAGGTAAAAAAGGTGCACAAGGTGTAGCTGATGCTATCAATGCTACATTTGCAGGT 3406
                                                                                                                                                                                                                                                                                                                                                                                                                     ATTACTGAACCAGTAATTACATTAAAATAAGCAATTAACTTAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AMAMATTCTMAGCTATTAGGAMAMATATTGATGTTATTGTMAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTGCAACAGGTGCTACTATTAC---ATTAACTTCTACTGTAACACCAGTAGGTACTACA 3823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAGCTGCAAATCTTGCTGCTACAATTGATACTTTAAACACTGCAGATAAGTTTACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTAGATCGGATATTACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCA 7671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGGGTGAAAAAGTAGTTATTGATGGTGTTGAATATACTGCTGTAGCATTTGGAACTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATCAAGTCGTTGCAGGAACAGCTGCTACAAAAGCATTCACGATTACTACAGCCCTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATATTATTGGAAAAAATGTAGATATTACAACAGAGGACAAGAATAATATCACTTCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAGTTGAAGTTACATTCTCTTCTGTTAATCAAGTATTAAATGCAGTAGTTAACGGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTGCAACTGTTTCTGGAGACAAAGTAGTTATTAAATCAGCTACAACAGGTGTTGGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTAAATGATGCTACGAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAA 7311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTGCAACAGGTGAAGGATTCACTTTAAATATTGATAATGCTGGTGCTCAAGTAATTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAGCCAATGTCTTGGTAAATAATTTTGGAACAGCTGTAGAAGATAGAAAAATTCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCAGCAGCTACAGCAGCTGAATATACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAGAGGAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGGAGGAGCAGCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATGTAACGGCA 7131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTACTTATGCAGATGCTAAAAATGCTGCAGGTGTTGCTGAAAATATTACTGCTAGCGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATA 707:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATTTGCTACAACTGTTCAAGCTGGTACATTATCTTCTTTAACTGCTGGTACATTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGTAAATGTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGGAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAGATAGTGCAAATAATTCATTATCTCTTACATTAGTTGAAACTGGTGCTAATACAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAACAGCAAATACATTCGTAGTTGAATCTGCTGCTAATACATTAGCTTCAGTAGCTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACATTAAAGAAAACTACTGGAGCAATTACTTCTGATACATTTACACAAGGTGTATTACCA
                                                                                                                                                                                    surface layer
                                  Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -TAAATCAATTGCTGCAGATTATACA
                                  #1.30
                                                                                                                                                                                    proteins
                                  (EPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3052
```

6190

2216

2276

2156

8 8 8 8 8 8 8 8 8

6892

6610

2633

2693

2573

2516

2456

```
NAME/KEY:
LOCATION:
FEATURE:
NAME/KEY:
LOCATION:
LOCATION:
US-08-682-517-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                              ş
                                                                                                                                                                                         밁
                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/08/682,517
FILING DATE:
CLASSIFICATION:
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
LENGTH: 4197 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
á
                                     ₽
                                                                         ş
                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 0.6%; Score 59.4; DB 2; Length 4197; Best Local Similarity 42.0%; Pred. No. 0.03; Matches 826; Conservative 0; Mismatches 1111; Indels 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE:
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Bacillus sphaericus INDIVIDUAL ISOLATE: P-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5830 ATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2156
   6490 TCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCCGGGGTAGGAGCCGGA 6549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1916 ÁAAGCÁAAACAAATCTCTGTÁÁAAACAAATGATAAAGGTGAAGCTACATTTGTTATCGGT
                                                                                                                                                                                                                                                                    2336 ACTTATGAAGCTACTTTATCTTCTACAGGAACTGTTATTACACCTGCTAAGAATTTAGAA 2395
                                                                                                                                                                                                                   TCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATA 5949
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATAAGTAATAAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTA 6189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTGTAACTAAGTTTGATGGTTCTGAAACTGCAGTATTTGCAGCAGAATTAGTAAACCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGGTAGATAAAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAGCACCATATCTTGATGGCTCAGCTATCAAAGCATACAAAAAATCAGATCTTAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAGTGATTGCTAAAGAAGAACAGATGATTATTACTACTCAAGGGCAAGTAGATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAAAACAAGGCGACCTTGATGAAGGTGAACCAAAAGCAGTTGCACCAATCTCTTACTTC 2095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAGCCTCAACCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTGATACAGTAAACGATTATGCAACACCAATTGCTTGGATTGATATTAATACTTCTGAT
                                                                                                                                                    AATGTAGGAGTAGGAGCTTCTTCTGATACCAATATTATAAAAAGAAATACCAAGACAAGA
                                                                                                                                                                                         GTTACTTCAGTGGATGGTAAAACAACTGCTGTTAAAGTAATTGCTACAGGTATTGCTGTT
                                                                                                                                                                                                                                                                                                    GTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCT
                                                                                                                                                                                                                                                                                                                                              GGTĠĊTÀĂTĠATATŤAAAGTĂĠATAÀCCAAĞTTAŤCTĆĂCCĂĂAŤCGŤÄGCTAČÄCAGTĀ
                                                                                                                                                                                                                                                                                                                                                                                 TTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAG
                                                               GTTGGAAAAACTACAATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                         AGCGGCAAAAAAGTAACTGGTACTTCTATTAAGAAAGCAACTTATACAATCTACAATACT 2275
                                         ACAAATGAAGTTCCAAACTCTTACACTGGTGTAGCTACTCAA---TTCAATACAGCTGAT
                                                                                                              AATACAGACGGTAAAGACTATGCATTTACTGCTAAAGAAGCTACAGCTACATTCACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
95..3850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mat_peptide
185..3850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sig_peptide
95..184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2155
                                                                                                                                                                                                                                                                                                            6309
                                         2572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                     á
                                                                                              Ś
                                                                                                                                      밁
                                                                                                                                                                      Š
                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2573
                                                                                                                                                                                                                                                                                        3407
                                                                                                                                                                                                                                                                                                                                                                   3347
                                                                                                                                                                                                                                                                                                                                                                                                                                              3287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6550 GTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAA 6609
 7552 AAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAAT 7611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCATGGGAAGCATTATTAACTCAATATGCAACTGAAGGCCAAAAAGTAACAATCTCATAT 2752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCA----AAGATTTTGGTAAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGC 6665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTATCAGGCAAAACATATAAATACTTCGGAGCTAATGGTAATGAAGTATTTGGTGAAGCG 2692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGTAGAAGATAGAAAAATTCTGAA 7251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAGAGGAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGGAGGAGCAGCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTATTTGCTACAACTGTTCAAGCTGGTACATTATCTTCTTTAACTGCTGGTACATTAACA 3112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTAGCTGATGCAGATCTTAATGTAAGTGCAACAACTGTTGATACTGCAACTGTTTCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAATCGGTTCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTC 689:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACACCAGCAGCTGGTTTAGTTGATTTAACAACTGCAACTAACACTTTAGGAATTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTATCAAACCAGTTGCTCCAACAACACCAGCAGCTCCAACTACTGGCGCATTAACATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGAAAAATTC-----TAAAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATGTAGATGGTGATACAGTTACATTTAAAGTAATTAGTGCTGTTAATTCTTCAACTGAA 2812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA - - TTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTG
                                                                                                                                                                                                                                                   GTAAAAGCGGATAGAGGAGATACTCAGGGAGGAAGGAATTAAAGCCATTGTGAAGACTTCT
                                                                                                                                                                                                                                                                                                                                                                                                     GGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAA 7311
                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTGCAACAGGTGAAGGATTCACTTTAAATATTGATAATGCTGGTGCTCAAGTAATTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAGCAGCTACAGCAGCTGAATATACTTC----TAAATCAATTGCTGCAGATTATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATGTAACGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGTAAATGTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGGAGCC 7011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAGATAGTGCAAATAATTCATTATCTCTTACATTAGTTGAAACTGGTGCTAATACAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATAATATTGCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCTTCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGACTCGAAACAAGT-----TAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACT
                                                                                                GGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATT
                                                                                                                                                                           GATATTATTGGAAAAAATGTAGATATTACAACAGAGGACAAGAATAATATCACTTCTACT
                                                                                                                                                                                                                 GAAGTTGAAGTTACATTCTCTTCTGTTAATCAAGTATTAAATGCAGTAGTTAACGGTAAA
                                                                                                                                                                                                                                                                                        ACTGCAACTGTTTCTGGAGACAAAGTAGTTATTAAATCAGCTACAACAGGTGTTGGTTCT
                                                                                                                                                                                                                                                                                                                                                                     TTAGCAĞĞTAAAAAAĞGTĞCACAAĞĞTĞTAĞCTĞATĞCTATCAATĞCTACATTTĞCAĞĞT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACATTAAAGAAAACTACTGGAGCAATTACTTCTGATACATTTACACAAGGTGTATTACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTACTTATGCAGATGCTAAAAATGCTGCAGGTGTTGCTGAAAATATTACTGCTAGCGTA
                                                             GTGGGTGAAAAAGTAGTTATTGATGGTGTTGAATATACTGCTGTAGCATTTTGGAACTGCT
                                                                                                                                          ĠĀŢCAAGŢĊĠŢŢĠĊĀĠĠAAĊĀĠĊŢĠĊŢĀĊĀĀĀĀĠĊAŢŢĊĀĊĠĀŢŢĀĊŢĀĊAĠĊĊĊŢŢŢĊŢ
                                                                                                                                                                                                                                                                                                                              GTAAATGATGCTACGAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6778
                                                                                                                                                                                                                     3526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6831
                                                                                                                                                                                                                                                           7431
                                                                                                                                                                                                                                                                                                                                  7371
                                                                                                                                                                                                                                                                                                                                                                       3406
                                                                                                                                                                                                                                                                                                                                                                                                                                                3346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2872
                                                                                                                                            3586
                                                                                                                                                                               7491
                                                                   3646
```

CCAACAGCAAATACATTCGTAGTTGAATCTGCTGCTAATACATTAGCTTCAGTAGCTGAC

밁 S 문 S

ş 밁

ફ

545

CATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAAT---GCTGTTGAAGGCA

```
; ORGANISM: Ureaplasma urealyticum US-09-601-198-56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 31
US-09-601-198-56/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 56, Appli
Patent No. 6531583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 436;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 0.6%;
Best Local Similarity 41.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Chen, Blison Y.
APPLICANT: Glass, Jennifer S.
APPLICANT: Glass, John I.
APPLICANT: Glass, John I.
APPLICANT: Heiner, Cheryl R.
APPLICANT: Lefkowitz, Elliot
TITLE OF INVENTION: UNCLEIC ACID PROBES AND METHOD FOR DETECTING UREAPLASMA
TITLE OF INVENTION: UNCLEIC ACID PROBES AND METHOD FOR DETECTING UREAPLASMA
TITLE OF INVENTION: UNCHER: US/09/601,198
FILE REFERENCE: UAB-13452/22
CURRENT APPLICATION NUMBER: US/09/601,198
CURRENT FILING DATE: 2000-12-08
PRIOR FILING DATE: 1998-01-30
RUMBER OF SEQ ID NOS: 181
ROFTWARE: Detentin Ver 2 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: Patentin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Cassell, Gail APPLICANT: Chen, Ellson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 14066
                                                                                                             8846
                                                                                                                                                                                                                                                 365
                                                                                                                                                                                                                                                                                                                                                                                                                                 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             125
                                                                                                                                                                                                     GAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTTATCA
                                                                                                                                                                                                                                                                                           AAGGTGAATTTAGAATTTAAGCGGTTTAAGAGAAGAAACGACATATCGTTTAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                          ATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAATGATGAAGCATTAGAAAACGATCAAATTGTCGAAGCAGTTTTTGCTCCAACTAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTAATAATGCTATTAAAACAGTTAGTGCACATAATGCTCAAGTACATTTTAAGCTTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGACTGAGAATTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTATGACATTACTACAA 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAATTCTAAGCTATTAGGAAAAATATTGATGTTATTGTAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAGCTGCAAATCTTGCTGCTACAATTGATACTTTAAACACTGCAGATAAGTTTACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTAGATCGGATATTACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCA 7671
                         AAGTTATTGATGTAGTGTCAAGCACATCAACAAATACAACAACAAGAAATTACTGTTA
                                                                AAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAATTC
                                                                                                             TTTTTGAGTATAAAAATGGTTCACAAGCATATGAATTCACGACACAAAATTTGAACATA
                                                                                                                                                         ATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTGGAAG
                                                                                                                                                                                                                                                                                                                                         TTGTCAATGGAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAAATTG
                                                                                                                                                                                                                                                                                                                                                                                   ATTTAAATGATCAAAAAGTAGTTGAAGCAAAATTAAATAATGTAACTAATTCATTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTACTGAACCAGTAATTACATTAAAATAAGCAATTAACTTAAAATA 3870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTGCAACAGGTGCTACTATTAC---ATTAACTTCTACTGTAACACCAGTAGGTACTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Application
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/09601198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 59.4; DB 3;
Pred. No. 0.044;
0; Mismatches 606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 14066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    u
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3766
                           8727
                                                                   544
                                                                                                               8787
                                                                                                                                                                                                     8847
                                                                                                                                                                                                                                              424
                                                                                                                                                                                                                                                                                                                                                                                                                            304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3823
                                                                                                                                                         484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 32
US-08-728-323A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMAT
APPLICANT: E
APPLICANT: E
APPLICANT: E
APPLICANT: E
APPLICANT: N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1, Appli
Patent No. 594867
                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC COMPUTER:
COMPUTER: PC COMPUTER:
COMPUTER: PATENT:
PC COMPUTER:
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSEE: Cooper &
                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                  STATE: New York
                                                                                                                                                      COUNTRY: U
                                                                                                                                                                                                                                              STREET:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8546 ATAGTTTAAAGAAAATTAATATTAAAGAAGTTGACAATGGCCAAGATCACGAATTTGTAA 8487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>AAGAAATCAATGTAAATTAATTCATTTGATGTTAATTTACAAAGCGAAATTACAGCATCAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACATTTTAGGTGATCCTGAAATTAAAACAACAGTTGATAATAACAACAATAGTGTTCATC 8607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAATTGATGGTATTCAGCGAGCTTGAAATAATAAAAAAGCTTGAATTAGTTTATGAATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTAATTTAAATAAATTAATTAA 8102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACTA 1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTTAAAAGATGACAATGATATTTTAAAAACAATGATATTGCAACAATTACTTATGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGAGGGGAAAAAGAAACTTATAACA 961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCGTAGAAGAAATTAATGATCGTGCTCCTGATAAATTAAATCAAACAACTATTAAAATTA 8367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATTA 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCGGTTTATATGCCGCCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATTA 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/08728323A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTTATCTCAAACCTTTATTAAAGTTGGCAAAAATAATACAAATGTAATTTATGACGAAA 8127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAATAATAACAAATTTGGTATTTAATAAAAAATGTAATTATTAAAAAAATTGAATTTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGATT
                                                                                                                                                                                                  New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATTTTTAGGTTTATTGACAAGTAA 1166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCTATCAATTTAAATG 1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGAACAAAAGTTGATGCTAATTGTAAAAACTAATGCACAAAATCAAAAATATTTAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGAA 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                   Bohenzky, Roy A.
Russo, James J.
Edelman, Isidore S.
Moore, Patrick S.
                                                                                                                                                                                                                                              E: Cooper & Dunham LLP
1185 Avenue of the Americas
                                                                                                                                                                           U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chang, Yuan
                                                                                                                                                                                                                                                                                                                                                         Immediate Early Protein From Kaposi's Sarcoma-Associated Herpesvirus, DNA
                                                                                                                                                                                                                                                                                                                                    Encoding Same And Uses
                                                                                                                                                                                                                                                                                                                  21
  US/08/728,323A
                                                Version
                                                                                                                                                                                                                                                                                                                                         Thereof
                                                #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8247
```

문 Ś 문 5 문 र् 용 Ş 밁 Ś 밁 Ş

δ

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                             RESULT 33
US-09-298-568-1
                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 3489 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
Sequence 1, Application US/09298568

Sequence 1, Application US/09298568

Patent No. 6322792

GENERAL INFORMATION:
APPLICANT: Kieff, Elliott D.
APPLICANT: Kaye, Kenneth M.
APPLICANT: Kaye, Kenneth M.
TITLE OF INVENTION: RHADINO VIRUS LANA ACTS IN TRANS ON A UNIT OF RHADINO TITLE OF INVENTION: VIRUS DNA TO MEDIATE EFFICIENT EPISOME PERSISTENCE FILLS REFERENCE: 16412-10001R

CURRENT APPLICATION NUMBER: US/09/298,568

CURRENT APPLICATION NUMBER: US/09/298,568

CURRENT FILING DATE: 1999-04-21

EARLIER APPLICATION NUMBER: US 60/109,422

EARLIER FILING DATE: 1998-11-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 215; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -08-728-323A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: White, John P.
REGISTRATION NUMBER: 28,678
REFERENCE/DOCKET NUMBER: 0575
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-278-0400
TELEFAX: 212-391-0525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGCAGGAATTATTTCCGAAGCAAAAGA 8048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGAGGATCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                            AGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAA 8288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCCGGAAGAAGTATTTTTCATGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGTTCTGTATTGGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCAĞGAĞTTAGAĞGAĞCAĞGAĞGTĞGAAĞAĞAĞCAĞĞAĞĞĞAĞĞTĞĞAAĞAĞÇAAĞAĞC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGTTAGAGGAGCAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGAGCAGGAAGAGCAGGAGGTTAGAGGAGGTTGGAAGAGCAGGAGCAGCAGGAGTTAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGAGGAGCAGGAGTTAGAGGAGGTGGAAGAGCAGGAAGAGCAGGAGTTAGAGGAGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGTGGAAGAGCAGGAGCAGGAGGGGGTGGAACAGCAGGAGCAGGAGACGGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0.6%;
ilarity 45.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1..3489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 59; DB 2; Length 3489;
Pred. No. 0.034;
0; Mismatches 260; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0575/52268/JPW/MSC/SKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                              8403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
; LENGTH: 3489
; TYPE: DNA
; ORGANISM: Kaposi's
US-09-410-399-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-298-568-1
                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-410-399-1
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 3
SOFTWARE: PatentIn Ver.
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 0.6%;
Best Local Similarity 45.3%;
Matches 215; Conservative
                                                                                                                                                                                                                SOFTWARE:
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Application US/09410399
Patent No. 6482587
                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                    FILE REFERENCE: UM-03778
CURRENT APPLICATION NUMBER: US/09/410,399
CURRENT FILING DATE: 1999-10-01
NUMBER OF SEQ ID NOS: 6
                                                                                                                                                                                                                                                                                                                       APPLICANT: Robertson, Erle S.
APPLICANT: Cotter, Murray A.
TITLE OF INVENTION: Methods to Inhibit or
TITLE OF INVENTION: TO Genomic Host DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
ORGANISM: Kaposi's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 3489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2507
                                7929 ТАЛАССАЛТТССАЛСАЛСАЛСТСАЛСТСАЛАСТССАЛАСЛАЛАЛАСЛАЛСТССТСА 7988
                                                                                                                                                                                                                                   PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAA 8403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAGCAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGAGGATCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGA
 TAGAGGATCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGTGGAAGAGCAGCAGCAGCGGGGTGGAACAGCAGGAGCAGGAGACGGTGGA 2801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGAGCAGGAAGAAGTTAGAGGAGGTGGAAGAGCAGGAGCAGCAGGAGTTAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGAGGAGCAGGAGTTAGAGGAGGTGGAAGAGCAGGAAGAGCAGGAGTTAGAGGAGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGAGCAGGAAGAGCAGGAATTAGAGGAGGTGGAGGAGCAAGAGCAGGAGCAGGAGGAGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCAGGAGTTAGAGGAGCAGGAGGTGGAAGAGCAAGAGCAGGAGGTGGAAGAGCAAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTTAGAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>AGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>AGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAAC</u>
                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sarcoma-associated herpesvirus
                                                                                                                                                              sarcoma-associated herpesvirus
                                                                                      0.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches 260;
                                                                    Score 59; DB : Pred. No. 0.034
0; Mismatches
                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 59; DB 3; Length 3489; Pred. No. 0.034;
                                                                                         DB 3; Length 3489;
0.034;
                                                                                                                                                                                                                                                                                                                                                  Enhance the Binding
                                                                        260;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                      0
                                                                                                                                                                                                                                                                                                                                                    of Viral DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
밁
                                                                        Ş
                                                                                                                           밁
                                                                                                                                                                 ş
                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          श्च
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 35
US-09-894-273-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-894-273-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 1
LENGTH: 3489
TYPE: DNA
ORGANISM: Kaposi's sarcoma-associated herpesvirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: Kieff, Elliott D.
APPLICANT: Ballestas, Mary
APPLICANT: Kaye, Kenneth M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Application US/09894273 Patent No. 6756203
                                                                                                                                                                                                                                                                                                                                                                                     Matches 215;
                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Ballestas, Mary E.
APPLICANT: Kaye, Kenneth M.
TITLE OF INVENTION: RHADINO VIRUS LANA ACTS IN TRANS ON A UNIT OF RHADINO
TITLE OF INVENTION: VIRUS DNA TO MEDIATE EFFICIENT EPISOME PERSISTENCE
FILE REFERENCE: 16412-10001R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: US 60/109,422
PRIOR FILING DATE: 1998-11-19
NUMBER OF SEQ ID NOS: 3
SOFTWARE: Patentin Ver: 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/894,273
CURRENT FILING DATE: 2001-06-28
                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                         AGCAGGAGTTAGAGGAGCAGGAGGTGGAAGAGCAAGAGCAGGAGGTGGAAGAGCAAGAGC
                                         AGCAGGAGTTAGAGGAGCAGGAGGTGGAAGAGCAAGAGCAGGAGGTGGAAGAGCAAGAGC
                                                                               TAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAAC
                                                                                                                           AGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGG
                                                                                                                                                                     TGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTCATGCAGA
                                                                                                                                                                                                               AGTTAGAGGAGCAGGAGCAGGAGCAGGAGCAGGAGCAGGAGCAGGAGCAGGAGC
                                                                                                                                                                                                                                                     TAGAGGATCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGTGGAAGAGCAGGAGCAGCAGGGGGTGGAACAGCAGGAGACGGTGGA 2801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAA 8403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGAGCAGGAAGCAGGAGTTAGAGGAGGTGGAAGAGCAGGAGCAGGAGTTAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAGGAGCAGGAGTTAGAGGAGGTGGAAGAGCAGGAAGAGCAGGAGTTAGAGGAGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATOGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGAGCAGGAAGAGCAGGAATTAGAGGAGGTGGAGGAGCAAGAGCAGGAGCAGGAGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGAGTTAGAGGAGCAGGAGCAGGAGCAGGAGCAGGAGTTAGAGGAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGA 8108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTTAGAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAGCAAAAGA 8048
AGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                      0.6%;
45.3%;
                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches 260; Indels
                                                                                                                                                                                                                                                                                                                                                                                                         Score 59;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                           0.034;
                                                                                                                                                                                                                                                                                                                                                                                                                          DB 3; Length 3489;
                                                                                                                                                                                                                                                                                                                                                                                  0,
8228
                                                                               8168
                                                                                                                                                                   8108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2446
                                       2566
                                                                                                                           2506
                                                                                                                                                                                                               2446
                                                                                                                                                                                                                                                                                                 2386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2746
                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
Ş
                                                                        B
                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 36
US-08-770-379-20/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
밁
                                                                                                                                                                                                                                ; TOPOLOGY: 11:
; MOLECULE TYPE:
US-08-770-379-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                    Query Match
Best Local Similarity
Matches 215; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence 20, Application Patent No. 5849564
                                                                                                                                                                                                                                                                                                                         TELEFAX: (212) 391-0525
INFORMATION FOR SEQ ID NO: 20
SEQUENCE CHARACTERISTICS:
LENGTH: 32207 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

COPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: PatentIn Release #1.0, V.

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/770,379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
APPLICANT: Chang, Yuan
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: White, John P.
REGISTRATION NUMBER: 28,678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: POLYPEPTIDES FROM KAPOSI'S SARCOMA-ASSOCIATED TITLE OF INVENTION: HERPESVIRUS, DNA ENCODING SAME AND USES THEREC NUMBER OF SEQUENCES: 20 CORRESPONDENCE ADDRESS:
ADDRESSEE: Cooper & Dunham LLP STREET: 1185 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Bohenzky, Roy
APPLICANT: Russo, James
APPLICANT: Edelman, Isid
                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 52
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Edelman, Isidore S. APPLICANT: Moore, Patrick S.
                                                                                                                                                                                                                                                               TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY: U
ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2567
                                                                                                                7929 ТАААGGAATTGGAAGAGAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGA 7988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATGGTAGAAGTTGAGGAAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAA 8288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New York
Y: U.S.A.
                                                                          TAGAGGATCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGCAGGAGCAGGAGCAGG 1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGAGCAGGAAGAGCAGGAATTAGAGGAGGTGGAGGAGCAAGAGCAGGAGCAGGAGGAGC
AGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGC 1955:
                                    ATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAGCAAAAGA 8048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGTGGAAGAGCAGGAGCAGGGGGGGTGGAACAGCAGGAGCAGGAGACGGTGGA 2801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAA 8403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGAGCAGGAAGAGCAGGAGTTAGAGGAGGTGGAAGCAGGAGCAGCAGGAGTTAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGG 8348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGAGGAGCAGGAGTTAGAGGAGGTGGAAGAGCAGGAAGAGCAGGAGTTAGAGGAGGTGG
                                                                                                                                                    0.6%;
nilarity 45.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                         (212) 278-0400
                                                                                                                                                                                                                                                 DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Roy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08770379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08/770,379
                                                                                                                                                                                                                                                                                                                                                                     20:
                                                                                                                                                  Score 59; DB 2;
Pred. No. 0.07;
0; Mismatches 2
                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                 52342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Version #1.30
                                                                                                                                                                                          DB 2;
                                                                                                                                                      260;
                                                                                                                                                                                        Length 32207;
                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AND USES THEREOF
                                                                                                                                                      0
                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2686
```

```
RESULT 37
US-08-757-669A-20/c
; Sequence 20, Application Uf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                  ; MOLECULE TYPE: US-08-757-669A-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No. 6183751
GENERAL INFORMATION:
Query Match 0.6%;
Best Local Similarity 45.3%;
Matches 215; Conservative
                                                                                                                                                                             TELEFAX: (212) 391-0525
INFORMATION FOR SEQ ID NO: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Edelman, Isidore S.
APPLICANT: MOORE, PARTICK S.
TITLE OF INVENTION: UNIQUE ASSOCIA
TITLE OF INVENTION: SEQUENCES AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 32207 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: White, John P.
REGISTRATION NUMBER: 28,678
REFERENCE/DOCKET NUMBER: 45
                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION: TELEPHONE: (212) 278-0400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STATE:
                                                                                                                                                                                                                                                                                                         FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 1185 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                              STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19370
                                                                                                                                                                                                                                                                                                                                                                                                                                                       10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGAGCAGGAAGAGCAGGAGTTAGAGGAGGTGGAAGAGCAGGAGCAGGAGTTAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGAGGÁGCÁGGAGTTAGÁGGÁGGTGGAAGAGCÁGGÁAGAGCÁGGAGTTAGÁGGAGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGAGCAGGAAGAGCAGGAATTAGAGGAGGTGGAGGAGCAAGAGCAGGAGCAGGAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCAGGAGTTAGAGGAGCAGGAGGTGGAAGAGCAAGAGCAGGAGGTGGAAGAGCAAGAGC 1943:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGAGTTAGAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCCGGAAGAAGTATTTTTCATGCAGA 8108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAA 8403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Russo, James J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bohenzky, Roy A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chang, Yuan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cooper & Dunham LLP
                                                                                                              double
                                                                                 DNA (genomic)
                                                                                                                                                                                                                                                                                                              424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    UNIQUE ASSOCIATED KAPOSI'S SARCOMA VIRUS SEQUENCES AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/08757669A
                                                                                                                                                                                                                                                                                                                                          US/08/757,669A
                                                                                                                                                                                 20:
                                                                                                                                                                                                                                               45185-F
   0; Mismatches 260; Indels
                  Score 59; DB 3
Pred. No. 0.07;
                                 DB 3; Length 32207;
                                                                                                                                                                                                                                                                                                                                                                          #1.30
     0
     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1949:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1937
     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
```

```
US-09-230-371A-20/c
; Sequence 20, Application US/09230371A
; Patent No. 6348586.
                                                                                          B
                                                                                                                                             Ś
                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                 S
                                                                                                                                                                                                            뭉
                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-230-371A-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Chang, Yuan
APPLICANT: Bohenzky, Roy A
APPLICANT: Russo, James J
APPLICANT: Bdelman, Isidore S
APPLICANT: Moore, Patrick S
TITLE OF INVENTION: UNIQUE ASSOCIATION OF THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS: 30
SOPTMARE: PatentIn Ver. 2.0
SEQ ID NO 20
LENGTH: 32207
TYPE: DNA
ORGANISM: Kaposi's sarcoma-associated herpesvirus
                                                                                                                                                                                                                                                                                                                     Query Match 0.6%;
Best Local Similarity 45.3%;
Matches 215; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILE REFERENCE: 45185-G-PCT-US
CURRENT APPLICATION NUMBER: US/09/230,371A
CURRENT FILING DATE: 1999-11-17
PRIOR APPLICATION NUMBER: PCT/US97/13346
PRIOR FILING DATE: 1997-07-22
NUMBER OF TECT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19610
                                                                                                                                                                                                            19670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7929
8049 TGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGA 8108
                                                                                                                                                                                                                                                                  7929 TAAAGGAATTGGAAGAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGA 8108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGAGCAGGAATTATTTCCGAAGCAAAAGA 8048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGAGGATCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGG 19611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAAAGGAATTGGAAGAGAATCAATGTCAAAGTGGAAAAAGAAAAACAGAGTGACTGCTGA 7988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGTGGAAGAGCAGCAGCAGGGGGGGGGAACAGCAGGAGCAGGAGACGGTGGA 19196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGAGCAGGAAGAAGCAGGATTAGAGGAGGTGGAAGAGCAGGAGCAGCAGGAGTTAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGG 8348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGAGGAGCAGGAGTTAGAGGAGGTGGAAGAGCAGGAAGAGCAGGAGTTAGAGGAGGTGG 1931:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCAGGAGTTAGAGGAGCAGGAGGTGGAAGAGCAAGAGCAGGAGGTGGAAGAGCAAGAGC 19431
                                                                                             AGTTAGAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGC 1955
                                                                                                                                                ATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGCAGGAATTATTTCCGAAGCAAAAGA 8048
                                                                                                                                                                                                            TAGAGGATCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGG 19611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAA 8403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGAGCAGGAAGAGCAGGAATTAGAGGAGGTGGAGGAGCAAGAGCAGGAGCAGGAGGAGC 1937)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGAGTTÁGAGGAGCAGGAGCÁGGAGTTÁGÁGGÁGCAGGAGCAGGAGTTAGAGGAGCÁGG 1949:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGC 19551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UNIQUE ASSOCIATED KAPOSI'S SARCOMA VIRUS SEQUENCES AND
                                                                                                                                                                                                                                                                                                                        Score 59; DB 3; Length 32207;
Pred. No. 0.07;
0; Mismatches 260; Indels
                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8228
                                                                                                                                                                                                                                                                                                                           0
```

```
밁
                                                                                                                     Ś
                                                                                                                                                            밁
                                                                                                                                                                                    ક
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                              S
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 39
US-08-682-517-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-682-517-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: 13
INFORMATION FOR SEQ ID NO: 13
SEQUENCE CHARACTERISTICS:
LENGTH: 3666 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PAtentin Release #1.0, Vt
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/697
CILAGORIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 13, Application Patent No. 5874267
                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                            Matches 801;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION: APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: EXPRESS NUMBER OF SEQUENCES: 25 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19430
                                                                                        1912
                  GCTGTAACTAAGTTTGATGGTTCTGAAACTGCAGTATTTGCAGCAGAATTAGTAAACCAA
                                                   GTGGTAGATAAAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAAGAAAA
                                                                                      CAAGCACCATATCTTGATGGCTCAGCTATCAAAGCATACAAAAATCAGATCTTAATAAA
                                                                                                                     ACAGTGATTGCTAAAGAAGAAACAGATGATTATTATTACTACTCAAGGGCAAGTAGATAAA 6069
                                                                                                                                                                                           GGAGCCTCAACCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCT
                                                                                                                                                                                                                                                                TCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATA 5949
                                                                                                                                                                                                                                                                                                    AAAGCAAAACAAATCTCTGTAAAAACAAATGATAAAGGTGAAGCTACATTTGTTATCGGT
                                                                                                                                                                                                                                                                                                                                      ATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAGGAGCAGGAGTTAGAGGAGGTGGAAGAGCAGGAAGAGCAGGAGGTTAGAGGAGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGITTCTGTATTGGGAGGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCAGGAGTTAGAGGAGCAGGAGGTGGAAGAGCAGGAGGTGGAAGAGCAAGAGC
                                                                                                                                                          GCAAAACAAGGCGACCTTGATGAAGGTGAACCAAAAGCAGTTGCACCAATCTCTTACTTC
                                                                                                                                                                                                                              TCTGATACAGTAAACGATTATGCAACACCAATTGCTTGGATTGATATTAATACTTCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAA 8403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGAGCAGGAAGAAGAGTTAGAGGAGGTGGAAGAGCAGGAGCAGCAGGAGTTAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGGAGCAGGAGTTAGAGGAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGTGGAAGAGCAGGAGCAGCAGGGGGTGGAACAGCAGGAGCAGGAGACGGTGGA 19196
                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                           0.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Expression: 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08682517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13
                                                                                                                                                                                                                                                                                                                                                                         Score 58.2; DB 2;
Pred. No. 0.05;
0; Mismatches 1093;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    surface layer proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #1.30
                                                                                                                                                                                                                                                                                                                                                                                                            Length 3666;
                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (EPO)
                                                                                                                                                                                                                                                                                                                                                                         27;
                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                   6129
                                                                                                                                                                                           6009
                                                                                                                                                                                                                              1851
                                                                                                                                                                                                                                                                                                    1791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8168
                  2031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1949:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
8
                               밁
                                                              S
                                                                                                       밁
                                                                                                                                S
                                                                                                                                                                       В
                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                 멂
                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                  3049
                                                                                                                                                                             2929
                                                                                                                                                                                                                                               2869
                                                                                                                                                                                                                                                                                  6952
                                                                                                                                                                                                                                                                                                                     2809
                                                                                                                                                                                                                                                                                                                                                        6892
                                                                                                                                                                                                                                                                                                                                                                                                                            6832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6130
                                                                                                       2989
                                                                                                                                          7072
                                                                                                                                                                                                              7012
                                                                                                                                                                                                                                                                                                                                                                                           2749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2032
 GGAGCCAATGTCTTGGTAAATTAATTTTGGAACAGCTGTAGAAGATAGAAAAAATTCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATAAGTAATAAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTA
                                                                    ANAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGGAGGAGCAGCAATC
                                                                                                                                                                                                              GCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATA 7071
                                                                                                                                                                                                                                                 GTATTTGCTACAACTGTTCAAGCTGGTACATTATCTTCTTTAACTGCTGGTACATTAACA
                                                                                                                                                                                                                                                                           GATGTAAATGTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGCCC
                                                                                                                                                                                                                                                                                                                     AAAGATAGTGCAAATAATTCATTATCTCTTACATTAGTTGAAACTGGTGCTAATACAGGT
                                                                                                                                                                                                                                                                                                                                                      AATAATATTGCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTTACACTCTTCTACT
                                                                                                                                                                                                                                                                                                                                                                                           TTÄGCTGATGCÄGATCTTAATGTÄÄGTGCAACAACTGTTGATACTGCAACTGTTTCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                          GGAATCGGTTCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACTCGAAACAAGT-----TAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGAAAAAT-----TCTAAAATTA 6778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA--TTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCATGGGAAGCATTATTAACTCAATATGCAACTGAAGGCCAAAAAGTAACAATCTCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCA----AAGATTTTGGTAAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATCAGGCAAAACATATAAATACTTCGGAGCTAATGGTAATGAAGTATTTGGTGAAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAA 6609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTGGTTCAAACAGCAACTCTATTTGGTTTGCTGGTAAAAACCCAGTGAAATATGCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAAATGAAGTTCCAAACTCTTACACTGGTGTAGCTACTCAA---TTCAATACAGCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTGGAAAAACTACAATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATGTAGGAGTAGGAGCTTCTTCTGATACCAATATTATAAAAAAGAAATACCAAGACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTACTTCAGTGGATGGTAAAACAACTGCTGTTAAAGTAATTGCTACAGGTATTGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTAAAATCAGGAGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGTGTTGGTGGA 6369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTTATGAAGCTACTTTATCTTCTACAGGAACTGTTATTACACCTGCTAAGAATTTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGTGCTÄÄTGATATTAAAGTÄGATAÄCCAAGTTATCTCÄCCÄÄATCGTÄGCTACACAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCGGCAAAAAAGTAACTGGTACTTCTATTAAGAAAGCAACTTATACAATCTACAATACT
                                  TCAGCAGCTACAGCAGCTGAATATACTTC-----TAAATCAATTGCTGCAGATTATACA
                                                                                                       ACATTAAAGAAAACTACTGGAGCAATTACTTCTGATACATTTACACAAGGTGTATTACCA
                                                                                                                                      GCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATGTAACGGCA
                                                                                                                                                                           GTTACTTATGCAGATGCTAAAAATGCTGCAGGTGTTGCTGAAAATATTACTGCTAGCGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACACCAGCAGCTGGTGGTTTAGTTGATTTAACAACTGCAACTAACACTTTAGGAATTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTATCAAACCAGTTGCTCCAACAACACCAGCAGCTCCAACTACTGGCGCATTAACATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATGTAGATGGTGATAĆAĠTTACATTTAAAĞTAATTAGTĞCTĞTTAATTCTTCAACTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTAGGAGCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>AATACAGACGGTAAAGACTATGCATTTACTGCTAAAGAAGCTACAGCTACATTCACAGCT</u>
                                                                                                                                                                                                                                                   2928
                                                                                                                                                                                                                                                                                                                                                                                           2808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2091
                                                                                                       3048
                                                                                                                                                                             2988
                                                                                                                                                                                                                                                                                  7011
                                                                                                                                                                                                                                                                                                                     2868
                                                                                                                                                                                                                                                                                                                                                        6951
                                                                                                                                                                                                                                                                                                                                                                                                                                6891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6309
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              음 성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 40
US-08-682-517-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                           US-08-682-517-14
          Query Match
Best Local Simi
Matches 801;
                                                                                                                                                                                                                                                        COMPUTER: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARRE: PatentIn Release #1.0, Version #1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/682,517
FILING DATE:
CIACOTTOM
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 14, Applicat Patent No. 5874267 GENERAL INFORMATION:
                                                                                                                                                       INFORMATION FOR SEQ ID NO: 14
SEQUENCE CHARACTERISTICS:
LENGTH: 3666 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: EXT
NUMBER OF SEQUENCES: 25
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                          FEATURE:
                                                                                                                                        MOLECULE TYPE:
                                                                                          NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3643 A 3643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7672
                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAA 7311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACTGCAACTGTTTCTGGAGACAAAGTAGTTATTAAATCAGCTACAACAGGTGTTGGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTAGCAGGTAAAAAAGGTGCACAAGGTGTAGCTGATGCTATCAATGCTACATTTGCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTGCAACAGGTGAAGGATTCACTTTAAATATTGATAATGCTGGTGCTCAAGTAATTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTAAAAGCCGATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCCATTGTGAAGACTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGTTGAAGTTACATTCTCTTCTGTTAATCAAGTATTAAATGCAGTAGTTAACGGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A 7732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTGCAACAGGTGCTACTATTACATTAACTTCTACTGTAACACCAGTAGGTACTACAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAGCTGCAAATCTTGCTGCTACAATTGATACTTTAAACACTGCAGATAAGTTTACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTAGATCGGATATTACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAACAGCAAATACATTCGTAGTTGAATCTGCTGCTAATACATTAGCTTCAGTAGCTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGGGTGAAAAAGTAGTTATTGATGGTGTTGAATATACTGCTGTAGCATTTGGAACTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATCAAGTCGTTGCAGGAACAGCTGCTACAAAAGCATTCACGATTACTACAGCCCTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATATTATTGGAAAAAATGTAGATATTACAACAGAGGACAAGAATAATATCACTTCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTAAATGATGCTACGAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Application
           Conservative
                                                                                          CDS
1..3666
                                                                                                                                           DNA (genomic)
                            0.6%;
                                                                                                                                                                                                                                                                                                                                                                                                         Expression 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/08682517
                                                                                                                                                                                                                                         14:
           Score 58.2; DB 2;
Pred. No. 0.05;
0; Mismatches 1093;
                                                                                                                                                                                                                                                                                                                                                                                                                      of surface layer
                                                                                                                                                                                                                                                                                                                          #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                     proteins
                                             Length 3666;
                                                                                                                                                                                                                                                                                                                          (EPO
               Indels
             27;
               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7731
                6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                            밁
                                                                                                                                                                                        Ş
                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                          맑
S
                               밁
                                                              S
                                                                                              밁
                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5830
                                                                                                                                                                                                                                                                                                                                                          2449
                                                                                                                                                                                                                                                                                                                                                                                          6550
                                                                                                                                                                                                                                                                                                                                                                                                                          2389
                                                                                                                                                                                                                                                                                                                                                                                                                                                          6490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2152
   6892
                                                                                                                                                               2629
                                                                                                                                                                                                                                                             9999
                                                                                                                                                                                                                                                                                            2509
                                                                                                                                                                                                                                                                                                                          6610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAG 5889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGCACCATATCTTGATGGCTCAGCTATCAAAGCATACAAAAAATCAGATCTTAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAGCAAAACAAATCTCTGTAAAAAACAAATGATAAAGGTGAAGCTACATTTGTTATCGGT 1791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTTATGAAGCTACTTTATCTTCTACAGGAACTGTTATTACACCTGCTAAGAATTTAGAA 2211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTGCTAATGATATTAAAGTAGATAACCAAGTTATCTCACCAAATCGTAGCTACACAGTA 2151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCGGCAAAAAAGTAACTGGTACTTCTATTAAGAAAGCAACTTATACAATCTACAATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGCCTCAACCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAAGATTCT
 AATAATATTGCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCTTCTACT
                                                                                                                            TGACTCGAAACAAGT-----TAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACT
                                                                                                                                                                                                                                                                                                                                                                                        GTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAA 6609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAAATGAAGTTCCAAAACTCTTACACTGGTGTAGCTACTCAA---TTCAATACAGCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTGGAAAAACTACAATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATGTAGGAGTAGGAGCTTCTTCTGATACCAATATTATAAAAAGAAATACCAAGACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTAAAATCAGGAGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGTGTTGGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTGTAACTAAGTTTGATGGTTCTGAAACTGCAGTATTTGCAGCAGAATTAGTAAACCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGGTAGATAAAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACAGTGATTGCTAAAGAAAAACAGATGATTATATTACTACTCAAGGGCAAGTAGATAAA 6069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAAAACAAGGCGACCTTGATGAAGGTGAACCAAAAAGCAGTTGCACCAATCTCTTACTTC 1911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTGATACAGTAAACGATTATGCAACACCAATTGCTTGGATTGATATTAATACTTCTGAT 1851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATA 5949
                                                                                                                                                              GCTATCAAACCAGTTGCTCCAACAACACCAGCAGCTCCAACTACTGGCGCATTAACATTA
                                                                                                                                                                                            GCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGAAAAAT----TCTAAAATTA
                                                                                                                                                                                                                             AATGTAGATGGTGATACAGTTACATTTAAAGTAATTAGTGCTGTTAATTCTTCAACTGAA
                                                                                                                                                                                                                                                        AA--TTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTG
                                                                                                                                                                                                                                                                                             GCATGGGAAGCATTATTAACTCAATATGCAACTGAAGGCCAAAAAGTAACAATCTCATAT
                                                                                                                                                                                                                                                                                                                            GCA----AAGATTTTGGTAAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGC
                                                                                                                                                                                                                                                                                                                                                            GTATCAGGCAAAACATATAAATACTTCGGAGCTAATGGTAATGAAGTATTTGGTGAAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                          TCTGGTTCAAACAGCAACTCTATTTGGTTTGCTGGTAAAAACCCAGTGAAATATGCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTACTTCAGTGGATGGTAAAACAACTGCTGTTAAAGTAATTGCTACAGGTATTGCTGTT
                                 TTAGCTGATGCAGATCTTAATGTAAGTGCAACAACTGTTGATACTGCAACTGTTTCATTA
                                                              GGAATCGGTTCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTC
                                                                                               ACACCAGCAGCTGGTGGTTTAGTTGATTTAACAACTGCAACTAACACTTTAGGAATTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTAGGAGCCGGA 6549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATACAGACGGTAAAGACTATGCATTTACTGCTAAAGAAGCTACAGCTACATTCACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6009
                                      2808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2031
                                                                                                                                                                                                                                                                                                                                 6665
                                                                                                                                                                                                                                                                                                                                                                                                                               2448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6369
      6951
                                                                    6891
                                                                                                    2748
                                                                                                                                   6831
                                                                                                                                                                   2688
                                                                                                                                                                                                   6778
                                                                                                                                                                                                                                   2628
                                                                                                                                                                                                                                                                 6723
                                                                                                                                                                                                                                                                                                 2568
                                                                                                                                                                                                                                                                                                                                                               2508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2388
```

S

밁

```
3643
                                                                                                                                                                                                                                                                                                                                                                                             3403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3343
                                                                                                 3583
                                                                                                                                                                                                                                                                                               3463
                                                                                                                                                                                                                                                                                                                                                                                                                                              7492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3163
                                                                                                                                                                                                3523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7072
A 3643
                                                                                                                                                                                        CAAGCTGCAAATCTTGCTGCTACAATTGATACTTTAAACACTGCAGATAAGTTTACAGCT
                                                                                                                                                                                                                                                                                         CCAACAGCAAATACATTCGTAGTTGAATCTGCTGCTAATACATTAGCTTCAGTAGCTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCAGCAGCTÁCÁGCAGCTGÁATÁTÁCTTC-----TAAÁTCÁÁTTGCTGCÁGATTATÁCA 3102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A 7732
                                                                                                 TCTGCAACAGGTGCTACTATTACATTAACTTCTACTGTAACACCAGTAGGTACTACAATT
                                                                                                                                          TTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATT
                                                                                                                                                                                                                                    GTTAGATCGGATATTACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCA 7671
                                                                                                                                                                                                                                                                                                                                          AAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAAGCAGCTGAAAAAGTAAAT 7611
                                                                                                                                                                                                                                                                                                                                                                                           GTGGGTGAAAAAGTAGTTATTGATGGTGTTGAATATACTGCTGTAGCATTTGGAACTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATCAAGTCGTTGCAGGAACAGCTGCTACAAAAGCATTCACGATTACTACAGCCCTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATATTATTGGAAAAAATGTAGATATTACAACAGAGGACAAGAATAATATCACTTCTACT 7491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAGTTGAAGTTACATTCTCTTCTGTTAATCAAGTATTAAATGCAGTAGTTAACGGTAAA 3342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTGCAACTGTTTCTGGAGACAAAGTAGTTATTAAATCAGCTACAACAGGTGTTGGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTAAATGATGCTACGAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTAGCAGGTAAAAAAGGTGCACAAGGTGTAGCTGATGCTATCAATGCTACATTTGCAGGT 3222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAA 7311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTGCAACAGGTGAAGGATTCACTTTAAATATTGATAATGCTGGTGCTCAAGTAATTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGTAGAAGATAGAAAAATTCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAGAGGAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGGAGGAGCAGCAATC 7191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACATTAAAGAAAACTACTGGAĞCAATTACTTCTĞATACATTTACACAAGGTĞTATTACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATGTAACGGCA 7131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTACTTATGCAGATGCTAAAAATGCTGCAGGTGTTGCTGAAAATATTACTGCTAGCGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATA 7071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTATTTGCTACAACTGTTCAAGCTGGTACATTATCTTCTTTAACTGCTGGTACATTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATGTAAATGTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGGCC
                                                                                                                                            7731
                                                                                                                                                                                             3582
                                                                                                                                                                                                                                                                                                                                                                                                                                         7551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2868
                                                                                            3642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2988
```

Search completed: November 25, 2005, 20:49:28 Job time : 1096 secs

8 8 8 8 8 8 8 8 8 8

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM nucleic -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Run on:
                   0 0 0 0
                                                                            იი
 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                        GenEmbl:*
1: gb_ba:*
2: gb_in:*
3: gb_om:*
4: gb_ow:*
5: gb_ov:*
6: gb_pat:*
7: gb_ph:*
8: gb_pr:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 November 25, 2005, 03:41:50 ; Search time 30972 Seconds (without alignments)
17850.297 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5883141 segs, 28421725653 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-647-057-8
9726
                                                                                      100.0
100.0
100.0
28.6
23.9
22.0
119.4
11.6
                                                                                                                                                                                    Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 atgagcggcatcaaaaataa.....gagaaaaaagggaaaaaatga 9726
         100.0 9726

100.0 12700

100.0 2780

28.6 2780

23.9 2322

23.9 2141

19.4 1887

11.6 170221

1.3 179553

1.3 179553

1.3 179553

1.3 179553

1.4 170221

1.4 170221

1.5 18662

1.2 34662

1.2 347050

1.2 347050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                           gb_pr:*
gb_ro:*
gb_sv:*
gb_w:*
gb_w:*
gb_w:*
gb_htg:*
gb_pl:*
                                                                                                                                                                                                                                                                                                                                                          gb_env:*
gb_ow:*
gb_pat:*
                                                                                                                                                                                                                                                                                                                                                                                                         gb_ba:*
AR442020
AR442027
AF312861
AR442022
AR442023
AR442024
AR442021
AC127421
AC127425
AR44253
AR6136528
AC136528
AC136528
AC136528
AF0529351
AF056936
                                                                                                                                                                                      ij
                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11766282
        AR442021 Sequence
AC127421 Mus muscu
AC024253 Homo sapi
M69183 Plasmodium
AE014843 Plasmodium
AE014847 Homo sapi
AC138477 Homo sapi
AC138510 Homo sapi
AC138510 Plasmodiu
AF056936 Plasmodiu
AF056936 Plasmodiu
                                                                                                        AR442020 Sequence
AR442027 Sequence
AF312861 Fusobacte
AR442022 Sequence
AR442025 Sequence
AR442023 Sequence
AR442024 Sequence
                                                                                                                                                                                       Description
A58933 Sequence
```

Ω							ი					a		Q			O	a								
4.4 4.5	43	42	41	40	39	38	37	36	35	34	ω ω	32	31	30	29	28	27	26	25	24	23	22	21	20	19	
97 94.6	97.4	97.4	98.6	98.6	98.6	100.4	101.4	101.6	102.2	104.2	104.2	105.2	105.6	106.2	107.4	107.6	113.8	113.8	113.8	116.2	116.2	116.2	116.2	116.2	116.2	
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	
1964 239813	237549	140289	253001	1701	1701	4102	228713	233713	179685	3399	2069	110000	16377	216959	208332	187543	203787	203395	192275	6152	6152	5529	5529	5529	5361	
2 14	14	u	N	6	σ	N	v	14	φ	σ	σ	14	N	ø	ø	14	14	14	9	σ	σ	σ	σ	N	σ	
AY277502S4 AC098356	AC112451	BX005458	AE014834	CS082924	CS075468	AF270648	BX890609	AC133034	AC122056	E10126	E10125	AC129389_1	AF202180	AC116998	AC122227	AC141261	AC153503	AC164629	AC164627	AR131271	A58932	AX536317	AX428966	PFA7010	AR131272	
AY277505 Plasmodiu AC098356 Rattus no	AC112451 Rattus no	BX005458 Zebrafish				AF270648 Plasmodiu	BX890609 Zebrafish	45	AC122056 Mus muscu	E10126 DNA encodin	E10125 DNA encodin	Continuation (2 of	AF202180 Plasmodiu	AC116998 Mus muscu	AC122227 Mus muscu	AC141261 Homo sapi	AC153503 Mus muscu	AC164629 Mus muscu	AC164627 Mus muscu	AR131271 Sequence	A58932 Sequence 1	AX536317 Sequence	AX428966 Sequence	AJ007010 Plasmodiu		

ALIGNMENTS

рb	φ	Db	Qy	Db	Qy	Db	Qy	Matches !	Query Match	ORIGIN		source	FEATURES	JOURNAL		TITLE	REFERENCE		ORGANISM	KEYWORDS	VERSION	DEFINITION	Locus	AR442020	1100111 11
181 ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAA	181 ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAA	121 ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTATGACATTACT	121 ACCGCGACTGAGAATTTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTATGACATTACT	61 GTTTTAATGATTTTTGGGATTGATTAACACTATGACGGTGAGGGCTAATGATACAATC	61 GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC	1 ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA	1 ATGAGCGGCATCAAAAATAACGTTCAGAGGACCAAGGAAGAGGATATCAGATTCTAAAAA	Matches 9726; Conservative 0; Mismatches 0; Indels 0; Gaps	100.0%; Score 972		<pre>/organism="unknown" /mol_type="genomic DNA"</pre>		Location/Qualifiers	Patent: US 6669940-A 8 30-DEC-2003; Kansas University Research Foundation; Manhattan, KS	thereof	Recombinant fusobacterium necrophorum leukotoxin vaccine and	1 (bases 1 to 9726)	Unclassified.	Unknown.	Inknown	AR442020.1 GI:42669171	Sequence 8 from patent US 6669940.			
240	240	180	180	120	120	60	60	0;															2004		

1261 GCAGCTACTTCTCCATTAAAAATTACCAATTTATATTTGGAGAAAGCCAATGGAAAACTT 1320	GCAGCTACTTCCATTAAAATTACCAATTTATATTTGGAGAAAGCCTATGGAAAACTT	1201 GAAGCAACAGAAGGAAAGGCAAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGA 1260	1141 GGATTTTTAGGTTTATTGACAAGTAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGTC 1200	1081 AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCTATCAATTTAAAT 1140	1021 GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT 1080 	961 ACTCCTTTAAGTTTATCAGATGTGGAAGCTTCCGTAAGAGTAAATAAA	901 AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGAAAAAGAAACTTATAAAC 960 	841 AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT 900 	781 CAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAATAGAAGAATATGTAAAAGGA 840 	721 TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCT 780	661 ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT 720	601 ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT 660	ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC 60	TTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA 5	ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG 4	ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAAATGGAGTT 42	AACTTTGTCAATGGAAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA 3 	241 AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT 300
Qy 2401 AGAATGACAATTATTCTTC	2341 T	Db 2281 TTTGGAAAAGAAACGAAAA	2221	Db 2161 CATGCTGAATTGGTATCGG	2101 G	2041 C	1981 1981 A	1921 G 1921 G	გ <u>წ</u>	2 2 g—g	1741 A 1741 A	1681 Q	4—4 5 21	Qy 1561 GATGATGTAAATGTGAGAAG	Qy 1501 GAAGGAGAAAATAAATCTTG	Qy 1441 TCTGTTTCTGTTGGAACGAI	Qy 1381 GAAGTAAAATCGAAGGGAAC 	Qy 1321 CTCAGTATCGGAGCGGGATZ
GAATGACAATTATTCTTCCGGATGGAACTTCAAAAACAGGAACTGCTATAGAAATTGCA 2460	TATTGAATGCATTTTCAGAAAAATTGGATGGAAAACCGGAGCTTTTACTAAATGGTGAA 2400	TITGGAAAAGAAACGAAAACTCCAGAATATGATCCGAAAGATATTGAATCTATTGAAAAAA 2340			SARAH SCARCAGIIII IIAI GAAAACAA IIAAAAAAAAAAA IIAA SCIICIII (SIGACAAII GCCCAA 1900) GAAAATGCAGCAGTTTTTTATGGAAACTATAAAAATAATGCTTCTGTGACAATTGCCGAT 2160				GAGGAGACAGTGTCAATGAGAATAAAGATTAAGCTAACGAACTTATTTAGTGTCGGT 1920 	ATCACGTTTATGAATCAGGTCATCTAAAATCAATTTTAGATGCAATAAAACAGCGGTTT 1860	TRACTABABATAGTGTTCTGCABACAGGATCTGATTTGGGABCTTCCBAGTTTATGABT 1800	GTATAGATGTAGATGGATATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAAC 1740 		ATGATGTAAATGTGAGAAGTGAAGCGATTAATTCCATTCGAGCTGCTGTAAAAGGTGGA 1620 	AAGGAGAAATAAATCTTCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACG 1560 	CTGTTTCTGTTGGAACGATGAGAGATTCCAATAAAGTAGCTCTTTCAGTATTGGTGACG 1500 	AAGTAAAATCGAAGGGAAGAGCAGATATTACTTCAAAATCTGAAAATACTATTGATGCT 1440 	

유 성 유 성

당 성 당 **성**

8 8 8 8 8

片

8 8 8

~	ט א	υ ч	8 4	σ <	σ <	o <	0 <	0 <	0 \	0 \	0 \	0 \	0 \	0 \	•	•		
3481 GGAGTAAAAAAGCGGGGGAATCTTCCTTCGAACGTTTCTCATACTCCCGATAAAGGACCG 3540	3421 AATAAAATTACGGATAGGATAGGATTCATTAACAGAAAAAATTACAAATTACATTTCTGAA 3480 	3361 TCAGAAGAAGACCAGAGGGATTTTTTGGCAAAATCGGAAACAAAGTGGACTCTGTAAAA 3420 	3301 ATTTCTGTTGCCGGAGGAATTAATAAGGTTGGAAGTAAACCGAGTGAAGAAAAACCGAAA 3360 	3241 GTAACAGTAACTGCGGAATCTTTAGAAGTAGATGCAAAAAACGACCGGAACAATCAACAGT 3300 	3181 GCTTCCATTGAAGATAATGACGAAGGACAAAGTAAATATGATAAGAATAAAGATGATGAA 3240 	3121 ACGAAAAATGCGGCGGTCGGGGTTGCTGTTGCGGTAAATGATTATGATATTTCAAACAAA	3061 GCTTTAAACAGTAAGAATGATACTTCTGTTTGGAATGCTGCCGGTTCAGCGGGAATCGGA 3120 	001 ATCAGTAAGGCAAGAGTTTCCATTGATGACGAAGCATATTTGAAAGCTAATAAAAAAATT 3	2941 TCTTTTAATGGTGGCTCAGGTGGGAATGCAATCAATGGAAGTTATAGTGGAGGT 3000 	2881 GAATTATCAGGAGAAAATATTAATGCAGATGCATTGAACAGACTTTTTCATGTAGCGGGA 2940 	2821 GGAAGATTAAATGTTCAAAGATCGAAAAATTCAGCTATCGTAGAAGCTAAAGAAAAAGCT 2880 	2761 GTGAATTTAGTTGGAAATATTGGACTTGCGAGAAGCAGTACATCCGGAAGTGCAGTCGGA 2820	2701 GGAGCTAAACTTGCTGCAAAAAAGATTTAAATATAAAAGCTATCAATAAAGCAGAAACA 2760 	2641 GTGGGAGGAGCTGTTTCGTGGGTAGAACAGGAGAATTATAGCAAGGTATCCGTTGGAAAA 2700 	2581 TATGCAAATTTTCACACTTTTACCTCTTCCGGAGCTAATGGAGAAAGAGATGTTTCTTCT 2640	2521 TTTTCAGAAGGATTGAGTGGACTGATTAAAGAAACTTTGAATTTTACAGGAGTAGGAAAT 2580		
																-		
B S	Q B 4	B 7	S B 8	\$ g 9	B 8	}	B &	\$ \$ \$	Db Qy	₽ &	, B &	S & &) B 4	S B &	S B &	? B &	Q	
4561 TCGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAA 4620	TCGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAA			4321 GACGTGGAAGCTAGCGTTGATAAATCTTCCATCAAAGAACLTAAATGAAATCAACTTAAATGAAATCAATGTCATT 4380 4321 GACGTGGAAGCTAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCATT 4380 4326 GCCAAAGATCTCCAAAGGAAGTTCCTAATCTAAATGAAATCAATGTCATT 4380	AG I CIGGAGCGGGAI I AGGAMAI I AI CANGGGCI I I I I I I I I I I I I I I I I I	GCAAAAGC CIIIIAGCAACCACICAAGIGACIGCGCGCGCGCGCGCGC	AACAACAAAGTAAATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGAC	4081 AATTTACAAGCTGGAAAGTCAAATGGAACTGTAGGGGTACTGTGACTGTTGCCAAATTA 4140	CAAAAAATIGATIGTIGATIGTCACIGCTTATICAAGCGGACACCCAAGTGACAGAGCTTTA	GIGAACAATGAAGTTIC GCAAAAATAAAATAAATAAATAAATACAAGTAAGAAAAATAATACAAGTAAGAAAATTCTGCAAAAATCAAAAATAATACAAGTAAGCAAGGAAAATCTGAAAAGC	ANAGANG GANGAN ANGANAMAN IA LA LA LA LA LA LA LA	ARABA LACAR IGC 11 1980 1 STANDSHARE I CANDI AGCARGA CARGACTAGO 11 SUANDERO CARGACTAGO 11 SUANDERO CARGACTAGO 11 SUANDERO CARGACTORA GORA GORA GORA GORA GORA GORA GORA G	A 11 CHANGIAN CHANGE CONTROL OF THE		TITGGAAGTTGGAAATAGGAACTTGGTGGGGGGGGGGGGG		3481 GGAGTAAAAAAAGCGGGGAATCTTCCTTCGAACGTTTCTCATACTCCCGATAAAGGACCG 3540 3541 TCTTTCAGTTTGGGAGCTTCTGGAAGTGTTTCTTTCTAATAATAATAATAAAAAGGAAACATCT 3600	

 6
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8

5521 GAAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAA 5580	5341 GATCAAGATAGAAAAATATCAATGTGACCGAAAAGATTATAGACCAATACTATA 5400	5161 GAGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAGATCAAAAAACAATAAATA	GAACGAAGGTAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTAAAGCTTTGAAT 5 GATTCTCATATTACAAACGTTTCTGCTGGAAGGCGCTGCAAGTATTAAGCAGGCTTGAATC 5 [ANTGACACGATTGCAAAGGTGGATAAAGGAAGAATAAAGCTCTCTCT	4621 AATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTCAT 4680
OY 6601 GTGGAAGAAGATTTTGGTAAAAAAGCTGAGAATTACAGCAAAACGTTATAGTTCT 660 CHILLIAN CONTROL	6421 AGGACAGATTCTAAGCAAAGAATTTCCTCTTTTTGGAGTCGGAGAAGAAGCTGAAATT 6 6481 ACAGCAGATTCTAAGCAAAGAATTTCCTCTTTTTGGAGTCGGAGTCGCAGCAGCCGGGTA 6	6301 CATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTAGTAGTTCTGTTGGT 6301 CATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTAGTAGTTCTGTTGGT [6061 GT 6121 AA 6121 AA 6181 AA 6181 AA	Db 5881 ATTACAGAGAGTCTGATGCCGATACTAGTGCAAAAACAGTGTCTGAAAGAGTGTCTACAAAAGCATTATGCTACAAAACAGTGTCTGGAAGTGTATGTA	Qy 5701 GTACGAAATGCTTTTGGTAAAAGCAAATCTCATTCATTTAAAACAATTTGGA 5760

	ממ	7861 GAAATGAATTCAGAGGTTGAAATTGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACT 7920	Ş
8941 GATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATT 9000	Q	7801 GCAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAAT 7860	밁
GAARCAAARICATICATITAKGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTA GAARCAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTA	B &	7801 GCAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAAT 7860	Ś
8821 GGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGG 8880	Db	7741 AAGCTATTAGGAAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAA 7800 	B 성
8761 ATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGAC 8820 8821 GGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAAATACAATTTCAGGG 8880	Qy Qy	7681 GGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCT 7740	B &
ATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGAC	Q g	GATATTACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATA 7	р В
8701 GCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAA 8760 	P Q	7561 TCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCG 7620 7621 GATATTACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATA 7680	& &
AAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACA	Db CS	61 TCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCG 7	Ş
	Db :	7501 GGAACTGCAGGTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAAT 7560 	라 성
8521 TTAGCGGTAGCCGGTGTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAG 8580 8581 TTAGCGTTCTACAACTGTAAATGGAGGAACGTATCTCAACTTCGTGCAAAAGCTTTGGCT 8640	0 D	7441 GGAAAAATGTAGATATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTG 7500 	B 8
8521 TTAGCGGTAGCCGGTGTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAG 8580	Ş	GATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATT	망
8461 ATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCT 8520		7381 GATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATT 7440	8
8401 GAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAAA	Db Db	7321 GCTACGAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCG 7380 	유 성
	Q B	7261 ACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAAGTAAATGAT 7320	В
8341 GGADATGGAGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACT 8400	2 29	ACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAAGTAAATGAT 7	8 8
281 ATTICTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCA	Db st	7201 GTCTTGGTAAATAATTTTGGAACAGCTGTAGAAGATAGAAAAAATTCTGAAGGAAAAAGGA 7260 	} &
8221 GGTAAAACTATGGTAGAAGTTGAGGAAAGGAAATTTGTTCAGAACCAAATCGATTGAATGCA 8280 8281 ATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCA 8340	S B	AAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGGAGGAGCAGCAATCGGAGCCAAT	용 성
8221 GGTAAAACTATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCA 8280	Q	7081 CACAATAACTCTGATTTGACTTTCGGTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAA 7140 7141 AAAAATATTAAGCAAACAGCAAGCAAATGGAGGGAATCGGAGGAAGCAATCGGAGGCAATCGGAGGCAAT	§ B
8161 GCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCA 8220 8161 GCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCA 8220	D Q	CACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAA	ş
101 CATGCAGATATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAA	Db	7021 GCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTT 7080	음 성
8101 CATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAA 8160	& E	6961 GTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGAGGAGGAGGAGCCGCAGGTCTT 7020	DЬ
	P 9	961 GTAAAAAGCTCTTAATAAAATTTCCGAATTCCTTGACAGCCGGTGGAGGAGGAGCCGCAGGTCTT	8
ACTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAA	Db .	6901 GCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCTTCTACTGATGTAAAT 6960 	§ 8
7921 AGCCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTG 7980	9 B	6841 TCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATT 6900	B 8
	Q E	781 ACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCGG	당
7861 GARATGARTTCAGAGGTTTGARATTGAGARGAGTATTTTCAATGARGAAAAATAGAGTAACT 7920			

```
RESULT 2
AR442027
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                              음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 유성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                       유 성
                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                중 유
                           FEATURES
                                                  JOURNAL
                source
                                                                                                                                                                                                                                                                                                                          9661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9361
                                                                                                                                                                                                                                                      9721
                                                                                                                                                                                                                                                                                                    1996
                                                                                                                                                                                                                                                                                                                                                                                                                                              9481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9001
                                                                                                                                                                  AR442027
Sequence
AR442027
Unknown.
Unclassified
                                                                                                                                  Unknown
                                                                                                                                                          AR442027.1
                                                                                                                                                                                                                                                                      AAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATGCCGGATATGATAAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGAAGCCAAAATCGGA
                                                                                                                                                                                                                                                                                                                                                                AAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGACATGCTATTGTAGAAACTACTGGAAAAACAAGAATATCAAGCATTTACAAGAGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGACATGCTATTGTAGAAACTACTGGAAAAACAAGAATATCAAGCATTTACAAGAGCAAAA
                                                                                                                                                                                                                                                                                                                  ANANAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATANATATACATGGCAT
                                                                                                                                                                                                                                                                                                                                                                                               TTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                               TTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCAAAAGTCATGCTGCAGCTGCCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGGTGGCTGAAGCAAGAGGTGCAAGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAAATTCAAAAAATATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACC
                                                                                                                                                                                                                                                      AAATGA
                                                                                                                                                                                                                                                                                                     AAAAATTCAAAAAATAATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCAT
                                                                                                                                                                                                                                                      9726
                                                                                                                                                                                                                                                                             9726
                                                                                                                                                                                15
                                                                                                                                                                                 from
                                                                                                                                                                                patent
                                                                                                                                                                                11130 bp
: US 6669940
                                                                        Narayanan, S.K. and Chengappa, crophorum leukotoxin vaccine a
                                                                                                                                                                                            PAT
                                                                                                                                                                                            20-FEB-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9360
                                                                                                                                                                                                                                                                                                     9720
                                                                                                                                                                                                                                                                                                                           9720
                                                                                                                                                                                                                                                                                                                                                                                                9600
                                                                                                                                                                                                                                                                                                                                                                                                                      9600
                                                                                                                                                                                                                                                                                                                                                                                                                                              9540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9060
                                                                                                                                                                                                                                                                                                                                                  9660
                                                                                                                                                                                                                                                                                                                                                                         9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9300
                                    밁
                                                       Ś
                                                                                   음 성 음
                                                                                                                                                  Ş
                                                                                                                                                                             밁
                                                                                                                                                                                               Ş
                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                  음 성
                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                      중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 9726; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1034
                                                                                                                                                                                                                                                                                                                          1574
                                                                                                                                                                                                                                                                                                                                                                                                                      1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1214
                                                                                                                                                                                                                                                                            1634
                                                                                                                                 1814
                                                                                   1874
                                                                                                                                                                                                                               1694
                                                                                                                                                                                                                                                                                                                                                                         1514
                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
              961
                                                            901
                                                                                                         841
                                                                                                                                                        781
                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۳
                                                                                  ACCGCGACTGAGAATTTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTATGACATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA
 AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGAAGGAGAAAAAGAAACTTATAAC
                                                                                                                                                CAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA
                                                                                                                                                                                                                             ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT
                                                                                                                                                                                                                                            ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT
                                                                                                                                                                                                                                                                                           ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT
                                                                                                                                                                                                                                                                                                                                                                         GAAGAAGCCAAACATGGTAAAGTTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTTAAAA
                                                                                                                                                                                                                                                                                                                                                                                               GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACTTTGTCAATGGAAAAATTGAAGTAGATGGGGATTATCAACGGAATTCGAGAAAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTTGCTTTTAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCGCGACTGAGAATTTTGGAACAAAATAGAAAAAAAGGATAATGTTTATGACATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTTTAATGATTTTGGGATTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA
                                                                                                                                  CAAAAAGCTATGGGAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA
                                                                                                                                                                                 TTAAAAGCTACCAAGACAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCT
                                                                                                                                                                                               TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCT
                                                                                                                                                                                                                                                                             ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT
                                                                                                                                                                                                                                                                                                                            ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC
                                                                                                                                                                                                                                                                                                                                                 ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                      ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTTTGTCAATGGAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA
                                      AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGGAAAAAGAAACTTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mol_type="genomic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 9726;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1093
                1020
                                                                                                                                                                                                                                                                                                                                                  600
                                                                                                                                                                                                                                                                                                                                                                          1573
                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                       1993
                                                                                      1933
                                                                                                                                  1873
                                                                                                                                                                                  1813
                                                                                                                                                                                                                                                                               1693
                                                                                                                                                                                                                                                                                                                            1633
                                                                                                                                                                                                                                                                                                                                                                                                                         1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                            900
                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                     660
```

4094 3121 4154	1 AGACITICI CAGNGI GANGGANA I GANGGANA I ANTICATOR I ANTICATORI	8 8 8 8
ن عب س	921 GTGTCTGCAACCATAGCAAATCATAATAATTCTGCTTCTGTGGCAATAGGAGAGAGA	& A B
2941 3974	861 GGAGGAGACAGTGTCAATGAGGAAATAAAGAATAAGCTAACGAACTTATTTAGTGTCGGT 1920 	음 성 :
2881 3914	2774 ATTACTAAAAATAGTGTTCTGCAAACAGGATCTGATTTGGGAACTTCCAAGTTTATGAAT 2833 Qy 1801 GATCACGTTTATGAATCAGGTCATCTAAAATCAATTTTAGATGCAATAAAACAGCGGTTT 1860	를 ⁵ 등
21 54	714 CGTATAGATGTAGATGGATATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAAC 2773 741 ATTACTAAAAATAGTGTTCTGCAAACAGGATCTGATTTGGGAACTTCCAAGTTTATGAAT 1800 711	\$ B
4 4		
3674 GTGGGAGGGCTTTTGGTGGGTAGAAGGGAGAATTATAGCAAGGTATCCCTTTGGAAAA 2701 GGAGCTAAACTTGCTGCAAAAAAAGATTTAAATATAAAAGCTATCAATAAAGCAGAAACA	1620 4 2653	§ § §
614 641	501 GAAGGAGAAAATAAATCTTCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACG 15 	유 성
2521 III CHAMAGAII GOOLUGA KARAA KAR	TCTGTTTCTGTTGGAACGATGAGAGATTCCAATAAAGTAGCTCTTTCAGTATTGGTGACG 1500	용 성
494	381 GAAGTAAAATCGAAAGGGAAGAGCAGATATTACTTCAAAATCTGAAAATACTATTGATGCT 1440 	
434	321 CTCAGTATCGGAGCGGGATATATTTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGA 1380	
74	261 GCAGCTACTTCTCCATTAAAAATTACCAATTTATATTTGGAGAAAAGCCAATGGAAAAACTT 1320 	
314	1 GAAGCAACAGAAGGAAAGGCAAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGA 1260 	
54 4	1 GGATTTTTAGGTTTATTGACAAGTAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGTC 1200	
- 4	1081 AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCTATCAATTTAAAT 1140	유 성
01	1080	유 상 등
	2	ř

Qy 6				Qy 5 Db 6 Qy 5	Qy 5 Db 6 Db 6	Qy 5 Qy 5 Qy 5	0 6 9 5 9 6 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
01 61 94 21	6121 AAAAGAAAA 7154 AAAAGAAAAA 6181 AAATCTTTA 6181 AAATCTTTA 7214 AAATCTTTA 7214 AAATCTTTA 7214 AAATCTTTA 7214 AAATCTTTA 7214 AAATCAAGA	4 4 4	4 4 4			521 GAAAATAATG 554 GAAAATAATG 551 GTGGTCACAA	6374 GATCAAGATA 5401 GCAGTCGGAG 6434 GCAGTCGGAG 5461 TTGAATAAGA
CATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGT	AAAAGAAAAATAAGTAATAAAAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTA	AAAGATTCTACAGTGATTGCTAAAGAAGAAGAACAGATGATTATATTACTACTCAAGGGCAA	ATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGT	GCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTA	GTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAAAT	GAAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAA	GATCAAGATAGAAAAATATCAATGTGACCTGCAAAAGATTATACCTATGACCAATACTATA GCAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCCTCTGCAAGTACTACC [
TTACACGAATTCAA	AGGATTTGTTACCA	AGAAGAAACAGATG 	IGCTAATTATGCAG	RGGAGTGACAGGTT	AAATACTTCTGCAC AAATACTTCTGCAC AAATCTCATTCAT 	GCAAATGTTAATG	GTGACTGCAAAAG.
Troggagtagtagg 	ATAGTTCAGCTAC	ATTATATTACTAC	GAACAGTGTCTGG	CTGTAGCAGTGAA	ATATAAAAATAG ATATAAAAAATAG CTATTAAAACAAT CTATTAAAACAAT	TTCTAGCTGAAAA	ATTATACTATGACO AAGGAGCTTCTGCJ
1 0 1 0 1 0	62 72 63 73	7 6 7 6	AGTGGCCCGT 5940	IPAGATTGTA 5820		558 661 564 667	64 4 4 5 5 5 4 4 5 5 5 5 5 5 5 5 5 5 5 5
. 30 33 60		ŭ ö ü o	ω ο ω ο	3 0 3 0	3 0 3 0		
p	p	5 B S B S	B & B &	90 90 90 90 90 90 90 90 90 90 90 90 90 9	, p	B 64 B 8	5 8 8 8
7381 GATAGA 8414 GATAGA 7441 GGAAAA 8474 GGAAAA 7501 GGAAAA 7501 GGAAACT 8534 GGAACT	44444		4 4 4	74	721 754 781 814	4 4 4 4	6481 ACAGCAC 7514 ACAGCAC 6541 GGAGCCC 7574 GGAGCCC
GGAGATACTCAGG		PACTCTGATTTGA	GCTCTTAATAAAA GCTCTTAATAAAA GCTCTTAATAAAA GCTCTTAACCGGAGTGG	GAGGCTGGAATTC GAGGTAGAACAG AAGGTAGAAACAG	TTTACCAAAGATG	JAAGCAAAGATTT JAAGCAAAGATTT NTTGGAAATGCCG	ATTCTAAGCAAG
GAGAAGGAATTAA GAGAAGGAATTAA CAACAGAGGACAA CAACAGAGAGGACAA CCGGCATCAGGAAC		CTTCCGTACGAGA CTTCCGTACGAGA CTTCCGTACGAGG CAGCAAATGCAGG	ITTCGAATTCCTT TTTCGAATTCCTT TTTCTGTTAACAC	TIGCAGCCGGAGT TIGCAGCCGGAGT TIGCAGCCGGAGT TIGCAGCCAGTCATAG TATCGATCATAG	NATICANACA CGAGI		JAATTTCCTCTTT
AGCCATTGTGAA AGCCATTGTGACI GAATAATATCACI GAATAATATCACI GAATAATATCACI AGTGGCAGTTACI AGTGGCAGTTACI	AGATAGAACAAGAT CAAAGAACAAGAT	AAAAGTAAATGTA AAAAGTAAATGTA AATCGGAGGAGCA AATCGGAGGAGCA	GACAGC COST GA A	ATCTGGAGTGGTT TACTTTACACTCT TACTTTACACTCT TACTTTACACTCT TACTTTACACTCT	GCANGAGTGAAA GCAAGAGTGAAA AGCAAGAGTGAAA TGAGATAAAATCA TGAGATAAAATCA	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	rggagicggagic
GATAGAGGAGATACTCAGGGAGAAGGAATTAAACCCATTGTGAAGACTTCTGATATTATT [CACAATAACTCTGATTTGACTTCCGTACGAGAAAAGTAAATTAACGGCAAAAGAGGAAAGAGGAAAGAGAGAG	GIAAAAGCICITAATAAAATITICGAATICCITIGACAGCCGGTGGAGGAGCCGCAGGTCTT GTAAAAGCTCTTAATAAAATITICGAATTCCTTGACAGCCGGTGGAGGAGGAGCCGCAGGTCTT GCAACAGCTCTTAATAAAAATTTCGGAATTCCTTGAACACCGCGGTGGAGGAGGAGCCGCAGGTCTT GCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAA	CAGACCIGARGETICATION CAGACCIGANT AT A CAGACACTACT CAGACACTACTACTACTACTACTACTACTACTACTACTACTAC	GTGGCAGTTACCAAGATGAATCAACCAGGACCAGGACTAAAATT TE TAAAATTATTT		ACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTA
TT 7440 TT 8473 TG 7500 8533 TG 8533 AT 7560 AT 8593		AA 7140 AA 8173 AT 7200 81 8233					TA 6540

Α.	ъ ч	o ≺	8 4	₽ ⊀	₽ ⊀	ъ ч	8 4	ъ ч	8 4	6 4	σ <	8 4	ъ ч	ъ ч	8 4	8 4	ъ «	₽ ≺
641 AAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACA	TTAACTTCTACAACTGTAAATGGAGAAAGGTATCTCAACTTCGTGCAAAAGCTTTGGCT	8521 TTAGCGGTAGCCGGTGTGCACAAAGGAACAAAGCATTTACGAGATCAAACAAG 8580	8461 ATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCT 8520	8401 GAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAAA	8341 GGAAATGGAGGAGTAGATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACT 8400	8281 ATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCA 8340	8221 GGTAAAACTATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCA 8280	8161 GCAGTAACAGGTTCTGTATTGGGAAGGAGTTGGAGTCACCCAAGGCAGAAGCTACTGCTGCA 8220	8101 CATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAA 8160	8041 GCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTT 8100 	7981 ACTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAA 8040	7921 AGCCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAAAA	7861 GAAATGAATTCAGAGGTTGAAATTGAGAAAGAGTATTTTCAATGAAGAAAATAGAGTAACT 7920	7801 GCAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAAT 7860	7741 AAGCTATTAGGAAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAA 7800	7681 GGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCT 7740	7621 GATATTACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATA 7680	7561 TCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCG 7620
\$	B 8	B &	B 2	S B &	B &) B &	B &	}	B 8	}	B &	}	B &	B &	, B &	B &	B &	8 B
9721 AAATGA 9726 	9661 TCTTCTGAAAAAGCATACAAAAAATTGACATATCAATCAA	10634 AAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCAT 10693		9481 GCCAAAAGTCATGCTGCAGCTGCTTCGGCAACCCACTATTGAAAAAAATGAAGTAAAA 9540												A 11 GARGA 1 AMA 1 AMARKIGA 1 GERMANDA 1AM ACGA 11 GERMANDA 1 CANCESTONO 1 CANCESTO		9674 AAAAATGAAAATTATGGAAATGTAAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACA 9733

8 8 8 8 8 8 8

B 8 B 8 B B

8 8 8 8

8 8 8 8 8

Ş

음 성

8 8 8 8 8 8 8 8 8 8 8

밁

10754 AAATGA 10759

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REMARK
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF312861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gg
                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AF312861 12700 bp DNA linear BCT 22-MAR-2005 Fusobacterium necrophorum OppF (oppF) gene, partial cds; and LktB (lktB), LktA (lktA), and LktC (lktC) genes, complete cds.
AF312861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (22-MAR-2005) Diagnostic Medicine / Pathobiology, State University, 1800 Denison Ave, Manhattan, KS 66506, US. Sequence update by submitter On Mar 22, 2005 this sequence version replaced gi:42759853.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (23-FBB-2004) Diagnostic Medicine / Pathobiology, Kansas State University, 1800 Denison Ave, Manhattan, KS 66506, USA Sequence update by submitter 5 (bases 1 to 12700)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Oelke, A.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 12700)
Narayanan, S.K., Nagaraja, T.G., Chengappa, M.M. and Stewart, G. Cloning, sequencing, and expression of the leukotoxin gene for the sequencing of the sequencing of the sequencing that the sequence of t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fusobacterium necrophorum
Bacteria; Fusobacteria; Fusobacterales; Fusobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fusobacterium necrophorum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF312861.3 GI:61676922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (12-OCT-2000) Diagnostic Medicine / Pathobiology, Kansas
State University, 1800 Denison Ave, Manhattan, KS 66506, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chengappa, M.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Stewart, G.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chengappa, M.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Stewart, G.C., Narayanan, S., Oelke, A.M., Nagaraja, T.G. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            State University, 1800 Denison Ave, Manhattan, 4 (bases 1 to 12700)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Narayanan,S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Oelke,A.M., Nagaraja,T.G., Wilkerson,M.J. and Stewart,G. The leukotoxin operon of Fusobacterium necrophorum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fusobacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     infect.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1500416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 12700)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 12700)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Immun. 69 (9), 5447-5455 (2001)
                              /codon_start=1
/transl_table=11
/product="Lkt8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mo_l
                                                                                                                                                                                                                                                                                                                                                                           KEEIFKAPKKEYTQFLLEVSMSFIF"
                                                                                                                                                                                                                                                                                                                                                                                                      "product="OppP"
"protein id="AA$45303.1"
'db_xref="G1:42759855"
/translation="DLFEKIKKERKLSCLFISHDLFVVRNICDRVLIMKEGKIIEEGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       codon_start=2/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        db_xref="taxon:859"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (mol_type="genomic DNA"
/strain="A25"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'gene="oppF"
note="ABC transporter; nucleotide binding/ATPase protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene="oppf"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   organism="Fusobacterium necrophorum"
protein_id="AAK27340.2"
                                                                                                                                                                                           'gene="lktB"
                                                                                                                                                                                                                                                                                                  'gene="lktB"
                                                                                                                                                 note="putative transport protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Narayanan, S., Oelke, A.M., Nagaraja, T.G. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Stewart, G.C., Nagaraja, T.G. and Chengappa, M.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      leukotoxin gene from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kansas
```

```
/db_xref="GI:42759854"
/translation="Wehlkkelktfyffmlilscpnilaegiqtsstesdagmlldrn
/translation="Wehlkkelktfyffmlilscpnilaegiqtsstesdagmlldrn
/translation="Wehlkkelktfyfffmliscpnikvsdvsfilkkleipksdiltee
/translagkiqkilhsekekrkQgienlekkkeedikvsdvsfilkkleipksdiltee
/translagkiqkilbee
/translagkiqinenipksdiltee
/translagkitgitalkiltee
/translag
                                                                                                                                          LVHEKNKVELSLDWVKQRTVTDLLKLKWVNNRLSKYTAGIGISHYEEDSVFYTKQNIT
KGKFIPISGDARNYTKYDMFLIYQKNLKYNTLVTLKMAGQYSLSKKLPSVEQIYAGGA
YNVEGYPENEMGAEHGVFFNAELSKLVENKGEFFVFLDGASLHGESAWQENRIFSSGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VTEGTASLSSFYTFPVSKKGTKISLQHSVGKLKHIQGALKHKITGNSYSYGVGIVHPI
GYKIRFLEKNNIAVSMAFPWKKKINSISVDSNRIYITINHEF"
```

gene="lktA" 'gene="lktA"

gene CDS

codon_start=1 transl_table=11 note="leukotoxin"

'db_xref="GI:13469804" protein_id="AAK27341.1"

EEAKHGKVPNGI I PVOGKVKI PLNPNGSI TVGGKI NAVEGI GIG YAALIKIKUTA LIKT
GITDEKULVINS DEI NINGELTGELKATETISGEDI ILSAKIGUS TEALIKIT
GITDEKULVINS DEI NINGELTGELKATETISGEDI ILSAKIGNETISKERI EE
YVKGNTKAN IESDAVLEADGNI KI SAKATNGR FI KKEGEKETYNTPLISLSDVEASVRV
NIGKDAVCHATEGANI HIS YSGUTATICHA
NIGKVIGKVUDI TIAEAKNIF YDATLYTIKLAKIGS SETVIGSI SEN NINGENGILISIGAGYI SA
KSNSWETTEGEVKSKGRAD ITSKSENTI DASVSVGTMRDSNKVALSVLVTEGENKSSV
VIIGKDAVCHATEGETTONWRSEALINS IRAAVKGGIGDSCHGVVAANI SHVANASSI DVDG
YLHAKKGRINTGANI ITRNSULOTGSBUDTSKEMDHYVESGHLKSI LDAI KORFGGIS
VREE I KNKLTNLFS VGVSATI ANHNNSASVAI GESGRLSGVEGSNWRALNEARANIEN
TSSGSVAVREEEKKLI GINAAVFYGRY KNNASVTI ADHABLVSEGKLI SETLLNFT
GVGNYAMENT FYSGANGERDVSS VGGAVSKWEGENY KSVS VGKGAKLAAKKDLNI KA
TNSAGSVAVRKEEKKLI GINAAVFYGRY KNNASVTI ADHABLVSEGKLI SETLLIFT
GVGNYAMENT FYSGANGERDVSS VGGAV KNNASVTI ADHABLVSEGKLI SETLLIFT
GVGNYAMENT FYSGANGERDVSS VGGAV KNNASVTI ADHABLVSEGKLI SETLLIFT
GVGNYAMENT FYSGANGERDVSS VGGAV KNNASVTI ADHABLVSEGKLI SENKILEY
KNESKYNLVONGDI TANANKEKNINGS FROGSOGNAI NAGKERAELSGEN INTAADAL
INKAETVILVONG LIRAKSTSCSAVGGALVSKVEGENY KSKS VOKGAKLAAKKDLNI KA
TNAAGSAGIGT KNAAVFYGAV VANDYD I SKASSI EDNDEGQS KYDKNKKI ALNSKADI VD
GVKTSALVKNSD I THAANKEKNINDALSGGTQVAAGAGLEAVKESGGOGKS VILLGTSASI IN
VNRUSAAKSENNTVAGESESOKOD JVTAACHGLEKEK VGALGAVANVIO
GKTSALVKNSD I THAANKEKNINDALSGGTQVAAGAGLEAVKESGGGGKS VILLGTSASI IN
VNRUSAAKSENTVAGESESOKOD JVTAACHAELSGGSNI SAGLAGAAAVNIO
GKTSALVAKOND THA TAGNAKGATVATTAACHSKKYLEDRGI VTI
GKTALVKNAD THAANKEKNINDALSGGTQVAAGAGLEAVKEKYLEDRGI VTI
GKTALVKSKITTAANGVEGAAGASI KOAGGAVANKI TONTTAALITAKTOKOAVSVN
KIDDVERAKUTONTAALASVAGTAVAHTULKKGSOSTATAVATANGDDR
KAINVTAAD THATAAGTVUSGAGAAASI KOAGGAVANKI TONTTA LELHHAKI TRAKGNV
GVI TESDAVI LAVAGTVAGAGAAASI KOAGATVAHTUSKOSTATI TAKTESLITAKTI SVAGGOVAAAGAGTAAATAATUSCOTAAAVATOLOGS
GRATKAVAGATAAATI WKAGATTAAKTE VAGATTAATATAAGASGOVAAAAGAGAGAAATAATUSCOTAAAATAAAGAGAGAAGATAATATUSCOTAAAAGAGAGAAGATAATAATUSCOTAAAAGAGAGAAATAATUSCOTAAAAGAGAGAAATAATUSCOTAAAAATAAAGAGAGAAGATAAATUSCOTAAAAATAAAGAGAGAAATAATUSCOTAAAAATAAAAGAGAGAAATAATAA NFGTKIEKKDNYYDITTNKIQGENAFNSFNRFALTENNIANLYFGEKNSTGVNNLFNF VNGKIEVDGIINGIRENKIGGNLYFLSSEGMAVGKNGVINAGSFHSIIPKQDDFKKAL EEAKHGKVFNGIIFVDGKVKIPLNPNGSITVEGKINAVEGIGLYAADIRLKOTAILKT translation="MSGIKNNVQRTRKRISDSKKVLMILGLLINTMTVRANDTITATE

GKNVDITTEDKNITSTGGLGTAGLASASGTVAVTNIKRNSGVTVENSFVKAAEKVNV
RSDITGNVALTAYQGPVGALGIGAAYAELNSNGRSUTSIKNSKLLGKNIDVIVKKSE
LRAEAKGLTVGAVAAGAIISKAKNEMISEIEEERSIFSERRVTSPSKGIGREINVKV
EKENRVTAESQGASVGAVAGAGIISEBAKDAGSSYLKVSTKSGRSIFHADNVNNEATHK
MKVTANSKAVTGSVLGGVGVTKAEATAAGKTMVEVEEGNLFRTNRLNAISKVEGLDED
KVTAKSSVVSGNGGGIAGAGNUTSTAQSNTESVVRLRKQDYENNDYTKKYISEVNALA

LNDTKNEAN I ESLAVAGVHAQGTNKAFTRSNKLTSTTVNGGNVSQLRAKALAKNENYG

VLKTLDEVNKEQDKKVNDATKKILQSAGISTEDTSVKADRGDTQGEGIKAIVKTSDII

Qy 1801 GATCACGTTTATGAATCAGGTCAAATCAGATCATTTTA Qy 721 TTAAAAGCTACCAAGACAAAATCTGGAGGATATTATTCTTTCAGCTCACATAGATTCTCCT 780	ω μ	4033	1621 3973	3913	3853	3793	1381 3733	3673	1261 3613	3553	3493	3433	1021 3373	/translation="MNLRESKFSEFLKNSNITCFEREBYKDELETVYYRSFMEVEGQN	Oy 901 Db 3253	/gene="lktC"	NNLARLEGKANKKTSVGSNQVDMYTDKYTWHSSEKAYKKLTYQSK Db 3133	3073
1801 GATCACGTTTATGAATCAGGTCATCTAAAATCAATTTTAGATGCAATAAACAGCGGGTTT 1860 	ATTACTAAAATAGTGTTCTGCAAACAGGATCTGATTTTGGGAACTTCCAAGTTTATGAAT	BI CGIALINGAIGIAGAIGGAIAICTACAIGCCAAGAGCGACTAAAIGIGGAGGCICAIAAC	73	561 GATGATGTAAATGTGAGAAGTGAAGCGATTAATTCCATTCGATCGA	501 GAAGGAGAAATAAATCTTCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACG 	41 TCTGTTTCTGTTGGAACGATGAGAGTCCCAATAAAGTACTCTTTCAGTATTGGTGACG	81 GAAGTAAAATCGAAGGGAAGACAAGTATTACTTCAAAATCTGAAAATACTATTGATGCT		GCAGCTACTTCCATTAAAATTACCAATTTATATTTGGAAAAGCCAATGGAAAACTT	201 GAAGCAACAGAGGGAAAGGCAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGA	41 GGATTITTAGGTTIATIGACAAGTCAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGTC 93 GGATTITTAGGTTTATTGACAAGTAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGTC	AGCTTGCAAACCACTCTTTAGCTTTGTTACAGGTTCTATTCTCCTATCAATTTAAAT AAGCTTGCAAAACCACTCTTTTAGCTTTTGTTACAGGTTCTATTCTCCCTATCAATTTAAAT AAGCTTGCAAAACCACTCTTTTAGCTTTTGTTACAGGTTCTATTCTCCCTATCAATTTAAAT	1 GGAAAGAATGTTGACATTGACGTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT 	961 ACTCCTTTAAGTTTATCAGATGTGGAAGCTTCCGTAAGAGTAAATAAA	901 AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAA	841 AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT 900 	3133 CAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAATAGAAGAATATGTAAAAAGGA 3192	3 TTAAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCT

5113 GTGAATTTAGTTGGAAATATTGGAAAATTCAGCAGAGCAGTACATCTGAAAGAAA	2641 GTGGGAGGAGCTGTTTCGTGGGTAGAACAGGAGAATTATAGCAAGGTATCCGTTGGAAAA 2700	2461 AACTATGTTCAGGGAGAAATGAAAAATTTAGAGGAAAAATTACCGAAAGGATTTAAAGCT 2520	4633 TTTTGAAAAAAAAAAAAAATTGATCCGAAAAACTAATTTAAAAAATTGAAAAA 4692 2341 TTATTGAATAGAAAACTCAAAAAATTGGATGGATAAAACCGGAGCTTTTACTAAATGGTGAA 2400	161 CATGCTGAATTGGTATCGGAAGGAAAATTGATATCAACAGTGAAAATAAAATTGAATAT [AGACTTTCTTCAGGAGTGGAAGGGAGTAATGTAAGGGCATTAAATGAAGCTCAAAATCTT 2	1861 GGAGGAGACAGTGTCAATGAGGAAATAAGAATAAGCTAACGAACTTATTTAGTGTCCGT 1920
AAAGAAAGTGGAGGACAAGGAAAAATCAAGTATCTATTTGGGAACTTCTGCTTCTATCAACTTA 3	Oy 3721 ATTGGAAGTGGAAATAGCAACATCAGTGGTTTAGCTGAAGCGGCTTGAAAATAA 1700	5893 TCTTTCAGTTTGGGAGCTTCTGGAAGTGTTTCTTTCAATAATAATAATAATAAAAAGGAAACATCT 3601 GCTGTCGTAGATGGAGTAAAGATAAAATTTGAAGGAAACAATCT 3601 GCTGTCGTAGATGGAGTAAAGATAAAATTTGAAGGAAACAATCAAAAAGGTAGAGGTGACT	3421 TCTTTCAGTATGGAGGTATGGAAGGAAAAAAATTACAAATTACAAATTACGAAAAGAAAAAATTACAAAATAAAAAA	Qy 3241 GTBACAGTAACTGCGGAATCTTTAGAAGTAGATGAAAACGACCGGAACAATCAACACT 3300		TCTTTTAATGGTGGCTCAGGTGGGAATGCAATCAATGGAATGGAAGTTATAGTGGAGGT

 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8

8533 AAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAAT 8592	5101 GGAGGAATGGTATCTGTCAATCGTGGTTCTGATGAAACGGAAGCTTTAGTTAG
AAAAGAAAAATAAGTAATAAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTA	7393 GATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAATC 5100
GIAGATAAAGITGGTAGATAAAGIATTCAAAAATCTTAATATTAACGAAGACTTATCACAA	4981 GGAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGAAT 5040
	4921 GCGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTACA 4980
GCAGCAATAGGAGCCTCAACCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTA	GCAAATAATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTTCTACG 4920
5881 ATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGT 5940	OY 4801 AATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGAAC 4860
1 AATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTT 	OY 4741 CTTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCA 4800
	aacatgtaaatgtggaggcaaaatcatctactgttgttgtgaatgcggcttctgga
	OY 4621 AATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTCAT 4680
	4561 TCGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAA 4620 Db 6913 TCGGTTGCTGGAACAGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAA 6972
GTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGA	OY 4501 AAGGAACAACTAGAAAAAGCAAAGAAAGAAGAAGAAGGAGCGGTCATTGTAAATGCTGCTTTA 4560
521 GAAAATAANGGAAATAAGGAAAAGGCAAANGTTAATGTTCTAGCTGAAAATACGAGTCAA	4500
TTGAATAGACAGTTTCTTCCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAA	QY 4381 GCCAAAGATGTCAAAGGTTCTGATCTAGCAAAAGAATATCAGGCTTTACTAAATGGA 4440
401 GCAGTCOGAGTTGGAGGAGCAAAAGGACCTCTGTGCAAGGAGCTTCTGCAAGTACTACC 5	4321 GACGTGGAAGCTTAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCATT 4380
341 GATCAAGATAGAAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATAT	4261 AGTTCTGGAGCGGGATTAGGAAATTATCAAGGGGCTGTTTCTGTCAATAAGATTGACAAT 4320
281 AATATTGGAAAACAATCAGTTATAGGTATTGTAAAAAACAGTAAAATTACAACGGCGAAT 	4201 GCAAAAGCTCTTTTAGCAACCACTCAAGTGACTGCTGCAGTGACGACGGGGGACGAATT 4260
221 ALIGE COGNANICE MARIES MONANICES CLOSE (CAMPA MARIES M	4141 AACAACAAAGTAAATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGAC 4200
GARTICANGE AND THE CONTROL OF THE CONTROL OF THE CANADA AND THE CONTROL OF THE CANADA AND THE	4081 AATTTACAAGCTGGAAAGTCAAAIGGAACTGTAGGGGCTACTGTGGCCAAATTA 4140 Db 6433 AATTTACAAGCTGGAAAGTCAAATGGAACTGTAGGGGGCTACTGTTGCCAAATTA 6492
7453 GGAGGAATGGTATCTGTCAATCGTGGTTCTGATGAAAACGGAAGCTTTAGTTAG	6373 CAAAAAATGGATGTTGATGTCACTGCTTATCAAGCGGACACCCAAGTGACAGGAGCTTTA 6432

8 8 8 8 8 8 8 8 8 8

8 8 8 8

음 성

8 8 8 8

B 8 B 8 B 8 B

8 8 8 8 8 8 8 8

	ACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAGAACAAGATAAAAAAGTAAATGAT	7201 GTCTTGGTAAATAATTTTGGAACAGCTGTAGAAGAAAAAATTCTGAAGGAAAAGGA 7260 		CACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAA 7	GCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTT	GTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTT 7	GCAAATAAGGTAGAAACAGATATCGATCGTACTACTTTACACTCTTCTACTGATGTAAAT 6	TCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATT	ACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGT 	GTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGAAAAATTCTAAAATTATG	661 GTTGCAATTGGAAATGCCGCAGTCGGAAGTGGCTGCAAAAGGAGCTGGAATTGGAACTAGCAGCA [601 GTGGAAGAAGCAAAGATTTTGGTAAAAAAAGCTGAGAATTACAGCAAAACGTTATAGTTCT 	541 GAAGCCGGAGTAGCAGCAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGAT	481 ACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTA	AGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGTTTCGGAGAGAAGAAGCTGAAATT	GTTGGTGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATATTATAAAAAGAAATACC	301 CATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGT 6	6241 ATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCTATATAAATGCAAAA 6300
8	dg VQ	g Qy	d dd	B 8	Db Qy	dg Qy	B 8	B &	g Q	D Qy	B &	B &	Qy db	B &	Db Q	Db Qy	D Q	Db Qy
8401 GAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAAA	8341 GGAAATGGAGGAGTATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACT 8400	ATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCA	GTAAAACTATGGTAGAAGTTGAGGAAGGAAATTGTTCAGAACAATCGATTGAATGCA	GCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCA	8101 CATGCAGATAATGTGAATATGGAAGCAACATAAAATGAAAGTAACAGCAGTTTCTAAA 8160 	JATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTT 	7981 ACTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGGAGCAGGGACGAGATTATTTCCGAA 8040 		GAAATGAATTCAGAGGTTGAAATTGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAATAGAGTAGAGTAATTI		7741 AAGCTATTAGGAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAA 7800 	GGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCT	7621 GATATTACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATA 7680 	7561 TCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCG 7620 	7501 GGAACTGCAGGTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAAT 7560 	7441 GGAAAAAATGTAGATATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTG 7500 	7381 GATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATT 7440 	7321 GCTACGAAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAAGCG 7380

8 8 8 8

 B
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 6
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8
 8

Db 118 Qy 96 Db 119 Qy 96 Db 120 QY 97 Db 120 RESULT 4 AR442022 LOCINSION VERSION VER
--

Q D Q D Q B	Q D Q D	\$ \$ \$ \$ \$	B & B &	8 8 8 8	Q	B & B &	8 8 8 8 8
1321 ĠĊĀĀĠŦĊŦĠŦŦĀŤŦĠĀŤĀĀĀŦŦĀĠĀĠĀĊŦŦŦŢĠĀĀĀĀĀĀĀĀĀĀĀĀĀĀĀĀĀĀĀ 1380 2299 ACTCCAGĀĀĀTĀŢĢĀTCCGĀĀĀGĀĀĀTĀŢŢĠĀĀĀĀĀĀĀĀĀĀĀĀŢĠĀĀŢŢŢĊĀ 2358	TATGGADACTATAAAATAARGCTTCTGTGACAATTGCCGATCATGCTGATTGGTATCG 12 GAAGGAAAAATTGATATCAACAGTGAAAAATTGAATAAAATTGAAAAATTCCTTCAAAAATG 22 IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	TGTAAGGGCATTAAATGAAGCTCAAAATCTTCGAGCGACTACGI 	1879 GAGGAAATAAGAATAAGCTAACGAACTTATTTAGTGTCGGTGTGTCTGCAACCATAGCA 1938	1759 CTGCAAACAGGATCTGATTTGGGAACTTCCAAGTTTATGAATGA	GGGGTTC	TCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACGATGATGATGATAGAGA 1	1339 TATATTTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGAGAAGTAAAATCGAAGGA 1398
Q D Q Q	D Q D Q	2 Q D Q D	QY QY QY	\$ \$ \$ \$;			0
3379 GGATTITTTTGGCAAAATCGGAAACAAAGTGGACTCTGTAAAAAATAAAATTACGGATAGT 3438	2281 GACGAAGGACAAAGIAAATAIGATAAAGAATAAAGATAA IGATAAAGAATAAGAATAAGAATAAGAATAAGAATAAGAATAAGAATAAGAATAAGAATAAGAATAAGAATAAGAATAAGAATAAGAATAAGAATAAGAATAAGAATAAGAATAAGAATAAGAAG	2161 GATACTTCTGTTTGGAATGCTGCCGGTTCAGCGGGAATCGGAACGAAAAATGCGGCGGTC 2220 3139 GGGGTTGCTGTTGCGGTAAATGATTATGATATTTCAAACAAA	2041 GGTGGGAATGCAATGAATGGAAGTTATAGTGGAGGTATCAGTAAAGAATT 2100 3019 TCCATTGATGACGAAGCATATTTGAAAGCTAATAAAAAATTGCTTTAAACAGTAAGAAT 3078	1921 AGATCGAAAAATTCAGCTATCGTAGAAGCTAAAAGAGAAAAGCTGAATTATCAGGAGAAAAT 1980 2899 ATTAATGCAGATGCATTGAACAGACTTTTTCATGTAGCGGGATCTTTTAATGGTGGCTCA 2958	2719 AAAAAGATTTAAATTATAAAGCTATCGAATAAAGCAGAACAGTGAATTTAGTTTGGAAAT 2778 1801 AAAAAAGATTTAAATATATAAAGCTATCAATAAAGCAGAACAGTGAATTTAGTTTGGAAAT 2838 2779 ATTGGACTTGCGAGAAGCAGTACATCCGGAAGTGCAGTCGGAGGAAGATTAAATGTTCAA 2838 1861 ATTGGACTTGCGAGAAGCAGTACATCCGGAAGTGCAGTCGGAGGAAGATTAAATGTTCAA 2838 1861 ATTGGACTTGCGAGAAGCAGTACATCCGGAAGTGCAGTCGGAGGAAGATTAAATGTTCAA 1920 2839 AGATCGAAAAATTCAGCTATCGTAGAAGCTAAAAGAAAAAGCTGAATTATCAGGAGAAAAAT 2898	2599 TTTACCTCTTCCGGAGCTAATGGAGAAAGAGATGTTTCTTCTCTGTGGAGCAGCTGTTTCG 2658	

OY 7705 TCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAAATATTGAT 7764	Qy 7525 TCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCT 7584	Query Match 23.9%; Score 2322; DB 6; Length 2322; Best Local Similarity 100.0%; Pred. No. 4e-296; Matches 2322; Conservative 0; Mismatches 0; Indels 0; Gaps 0; Oy 7405 GGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAATGTAGATATTACAACA 7464	AR44202 . Inknown Unknown Unknown I (lass 1 (lass 1 Recombi Recombi Paten: Paten: Kansas	Qy 3559 TCTGGAAGTGTTTCTCATAATATATAAAAAGGAACATCTGCTGTTGGAAGTA 3618 Op
Qy 8785 GCAAGAGATAATACGATTGTAAAGGTCAACGAAACCAAAGAGGTCTTGTCGGA 8844 Db 1381 GCAAGAGATAATACCATTGTAAGAGTCAACGAAACCAAAGAGGTCTTGTCGGA 8844 Qy 8845 AAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACCAAAGCAGAATCATCCATTGAAGAT 8904	8665 AAAGGAACTTGGAGGAGCCTTAGTCGGAAACAGCAGCAGCAGTAGAAAATTATACAAAG	8425 CAAGANTATGAAAATGATTACACAAAAAAATANATTTCAGAAGTCAANGCTCTTGCT	Oy 8185 GGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAG	Qy 7885 GAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGA 7944

ORGANISM Unknown. Unclassified. REFERENCE 1 (bases 1 to 2141) AUTHORS Nagaraja,T.G., Stewart,G.C., Narayanan TITLE Recombinant fusobacterium necrophorum preparation thereof JOURNAL Patent: US 6669940-A 11 30-DEC-2003; Patent: US 6669940-A 11 30-DEC-2003; FEATURES University Research Foundation; FEATURES Location/Qualifiers Source //organism="unknown" /organism="unknown"	2	2161 9625 2221 9685	2041 9505 2101 9565	9325 1921 9385 1981	1741 GC 9205 TT 1801 TT 9265 TT 9265 TT	Db 1561 GATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGAAATGTTGAAAAAATGTAGAAAAAGTGAAAATGTTAGAAAATGTAGAAAATGTAGAAAATGTAGAAAATGTAGAAAATGTAGAAAATGTAGAAAATGTAGAAAATGTAGAAAATGTAGAAAATGTAGAAAATGTAGAAAATGTAGAAAATGTAGAAAATGTAGAAAATGTAGAAAATCGGAAAATAGTAGTAGAAAACTACT Oy 9085 GGAAAACAAGAATATCAAGCATTTACAAGAAGCAAAATATATTCTTGGAAAAAGGAGAC Oy 9185 GGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAAGGAGAC Oy 9185 GGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAAGGAGAC Oy 9185 GGTGCAGCTGCAAGTATACAAGATGTACACATTTCCAATGAGATGGATATTAAAAAT
Oy Narayanan,S.K. and Chengappa,M.M. Db SC-2003; Pundation; Manhattan, KS Db Oy Db	DNA linear PAT 20-FEB-2004 Db 40. Db	2280	2100 9564 9160 9624	9384 1980 9444 2040	P-P H-H H-	1620 9084 9084 1680 9144 1740 9204 9204 9204
4393 AAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTACTAAATGGAAAAGATAAAAA 4452		4093 GGAAAGTCAAATGGAACTGTAGGGGCTACTGTAGGACTGTTGCCAAATTAAACAACAACAAGTA 100 541 GGAAAGTCAAATGGAACTGTAGGGGCTACTGTGGCCAAATTAAACAACAACAAAGTA 600 541 GGAAAGTCAAATGGAACTGTAGGGGGAACTGTAGCGCTTAATCGAACGACAAAAGCTCTT 4212 4153 AATGCTTCTATTAGTGGTGGGAAGATATACTAACGTTAATCGAGCGGACGCAAAAGCTCTT 4212 601 AATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGACGCAAAAGCTCTT 660 601 AATGCTTCTATTAGTGGTGGGAGAATATACTAACGTTAATCGAACGGACGCAAAAGCTCTT 660	73 GTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCCAAAAAATGGAT		3673 ACTITITGIAGAGCATGGGGCGGATCTGCTGCACTTCAGTGGAATCATATTGGAAGTGGA 3732	Query Match 22.0%; Score 2141; DB 6; Length 2141; Best Local Similarity 100.0%; Pred. No. 2.7e-272; Matches 2141; Conservative 0; Mismatches 0; Indels 0; Gaps 0; Matches 2141; Conservative 0; Mismatches 0; Indels 0; Gaps 0; 3553 GGAGCTTCTGGAAGTGTTTCTTTCAATAATATTTAAAAAGGAAACATCTGCTGTCGTAGAT 3612 1 GGAGCTTCTGGAAGTGTTTCTTTCAATAATATATAAAAAGGAAACATCTTGTTCTAGAT 60 3613 GGAGTAAAGATAAATTTGAAGGGAGCAAATAAAAAGGTACAGGTGACTTCTTCTGATTCT 3672 1

Ś

leukotoxin

and

Chengappa, M.M. vaccine

linear

PAT

20-FEB-2004

2141

Manhattan,

ଝ

Length 1887; Indels

0

Gaps

0

5683

60

120

5743

밁 Ś B Ş

밁 S 밁 S

```
1981
                                                                                                                                                  1921
                                                                                                                                                                            5473
                                                                                                                                                                                                           1861
                                                                                                                                                                                                                                                                    1801
                                                                                                                                                                                                                                                                                                                                                                                      1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4573
                                                    GCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAAT
                                                                                                      AATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAAT
                                                                                                                                               GTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGA
                                                                                                                                                                GTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGA
                                                                                                                                                                                                                         GGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACA
                                                                                                                                                                                                                                                                                   AAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTT
                                                                                                                                                                                                                                                                                                                           CAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGA
                                                                                                                                                                                                                                                                                                                                             CAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGA
                                                                                                                                                                                                                                                                                                                                                                                   GCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                      GCAAATGGAGGAAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAATCGGAGGAATGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGAATGATTCTCATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTACAGGAACGAAGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTTCTACGGCGGTAGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGAACGCAAATAATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAAAGGTGGATAAAGGAAGAATTTCCTGCTGATTCCTTAAATGTGAACGCAAATAATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCAAATGACACGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTGGACTTGCTATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTGGACTTGCTATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTCATGCGAAACATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTCATGCGAAACATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAATTACACAAAATACTTCTGCACATATAAAAAATAGTAC 5693
                                                                                                                                                                                                        GGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACA
                                                                                                                                                                                                                                                                 AAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAATCGGAGGAATGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTACAGGAACGAAGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTCTACGGCGGTAGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCAAATGACACGATT
                                                                                                                                                                                                                                                                                                                           1800
                                                                                                                                                                                                                                                                                                                                                                                     1740
                                                                                                                                                                                                                                                                                                                                                                                                                  5292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4992
                                                        5652
                                                                                       2040
                                                                                                                  5592
                                                                                                                                               1980
                                                                                                                                                                                                        1920
                                                                                                                                                                                                                                     5472
                                                                                                                                                                                                                                                                 1860
                                                                                                                                                                                                                                                                                              5412
                                                                                                                                                                                                                                                                                                                                                        5352
                                                                                                                                                                                                                                                                                                                                                                                                                                               1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4632
                             2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 7
AR442024
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                  Ś
                                               뮹
                                                                            Ś
                                                                                                               밁
                                                                                                                                     S
                                                                                                                                                                  밁
                                                                                                                                                                                               8
                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 1887; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                          6224
                                                                                    6164
                                                                                                                                              6104
                                                                                                                                                                                                      6044
                                                                                                                                                                                                                                                               5984
                                                                                                                                                                                                                                                                                                                                                                                   5864
                                                                                                                                                                                                                                                                                                                         5924
                                                                                                                                                                                                                                                                                                                                                                                                                                              5804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2101
                                                       541
                                                                                                                 481
                                                                                                                                                                           421
                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unknown.
Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
AR442024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 1887)

1 (bases 1 to 1887)

Regaraja, T.G., Stewart, G.C., Narayanan, S.K.
Recombinant fusobacterium necrophorum leukot
preparation thereof
Patent: US 666940-A 12 30-DEC-2003;
Kansas University Research Foundation; Manha
Location, Qualifiers
1. . 1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AR442024.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AR442024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGCAGTAGGAGCTGGAGTAGCAGTTAATAAATTACACAAAATACTTCTGCACATATAA
                TGGCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATT
                                                                                                                                                                         AGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGTGAATAAGATTGTAAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAATTACACAAAATACTTCTGCACATATAAAAAATAGTAC
TGGCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATT
                                                        CAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAG
                                                                          CAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAG
                                                                                                                                      ACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAGGATTTGTTACCAATAGTT
                                                                                                                                                                                                                                                                                                             ANACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAAGGATTTGTTACCAATAGTT
                                                                                                                                                                                                                                     CTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTATA
                                                                                                                                                                                                                                                                 CTACAAAAGCATATGTAAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTATA
                                                                                                                                                                                                                                                                                              AGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                 CAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19.4%; Scilarity 100.0%; P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="unknown"
/mol_type="genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:42669175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1887; DB 6; 1; Pred. No. 7.4e-239; 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1887
- US '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  87 bp
6669940.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
```

S 밁 Ş В Ś 밁 S 밁

6283

600

660

6223 540 6163 480 6103 420 6043

5983

300

360

5923

240

5863

180 5803

청 유 ঠ 유 성 유

5

Ş

ਰ

밁

· 5 B

Ś 밁 Ş 밁

В

```
1381
                                                                                                                                                                                                                                                             1261
                                                                                                                                                                                                                                                                                                  1201
                                                                                                                                                                                                                                                                                                                                       1141
                                                                                                                                                                                                                                                                                                                                                         6764
                                                                                                                                               1441
                                                                                                                                                                                                                                                                                                                                                                                                                1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6464
1681
                                                                                                                             7124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTTCCTCTTTTGGAGTCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATG
                                                                                                                                                                                              GAGGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTT
                                                                                                                                                                                                                         CTTCTACTGATGTAAATGTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTG
                                                                                                                                                                                                                                                             AAAATTCTAAAATTATGACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCGCAGCAGCCGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCGCAGCAGCAGCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTATAAAAAGAAATACCAAGACAAGAGTTGGAAAAAACTACAATGTCTGATGAAGGTTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTATAAAAAGAAATACCAAGACAAGAGTTGGAAAAAACTACAATGTCTGATGAAGGTTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAGTAGGTTCTGTTGGTGTGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATA
                                   AAAATTCTAAAATTATGACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAAT
                                                                                                                                                                                                                                                                                                                                                                            CTGGAATTGGAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGA
                                                                                                                                                                                                                                                                                                                                                                                      CTGGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                           CAAAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAG
        ATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAG
                                                                                                                                                                                     GAGGAGCCGCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                 CAAAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAG
ATAAAAAGTAAATGATGCTACGAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAG
                                                                                                                                                                                    CTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTT
                                                                                                                                                                                                                                                                                                                                                                            1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6343
                                                                                                                                                                                                                                                                                 6943
                                                                                                                                                                                                                                                                                                                     6883
                                                                                                                                                                                                                                                                                                                                        1200
                                                                                                                                                                                                                                                                                                                                                          6823
                                                                                                                                                                                                                                                                                                                                                                                              6763
                                                                                                                                                                                                                                                                                                                                                                                                                1080
                                                                                                                                                                                                                                                                                                                                                                                                                                   6703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6523
1740
                                                                        1620
                                                                                          7243
                                                                                                                                                1500
                                                                                                                                                                   7123
                                                                                                                                                                                     1440
                                                                                                                                                                                                       7063
                                                                                                                                                                                                                          1380
                                                                                                                                                                                                                                                                                                   1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   840
                                    1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       성 음 성
                                                                                                       Ş
                                                                                                                                            δ
                                                                                                                                                                   밁
                                                                                                                                                                               Ş
                                                                                                                                                                                                В
                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                          뮍
                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               뮍
            유성
                                                                  S
                                                                                     밁
                                                                                                                              片
                                                                                                                                                                                                                                                                                              Ş
```

8 8 8 8

5 B 5

밁

8 8 8 8

8 8 8 8

유 성 유

Ś

음 성 음

ঠ 🖁 ঠ

음 성

유

8 8 8 8

밁

```
RESULT 8
AR442021
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 1130; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1741
                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 1130)
1 (bases 1 to 1130)
Nagaraja,T.G., Stewart,G.C., Narayanan,S.
Recombinant fusobacterium necrophorum leu
preparation thereof
Patent: US 6669940-A 9 30-DEC-2003;
Kansas University Research Foundation; Ma
Location/Qualifiers
1. 1130
Cce 1. 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1861
           481
                                                 421
                                                                     361
                                                                                     361
                                                                                                         301
                                                                                                                             301
                                                                                                                                                241
                                                                                                                                                                                       181
                                                                                                                                                                                                         181
                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AR442021
Sequence 9 f
AR442021
AR442021.1
                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                     19
                                                                                                                                                                                                                                                                                                                           ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTCTACTGGTGGTTTTGGGAACTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA
                                                                                                                                               ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAGGATAATGTTTATGACATTACT
                                                                                                         ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAGGATAATGTTTATGACATTACT
                              ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG
                                         ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG
                                                                    ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT
                                                                               ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT
                                                                                                                                                                                                                                                                                                                                               11.6%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                             /organism="unknown"
/mol_type="genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:42669172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1130 i
patent US 6669
                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                               Score 1130; DB 6; ]
Pred. No. 3.6e-139;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .130 bp
                                                                                                                                                                                                                                                                                                                                                                                                DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1,S.K. and Chengappa,M.M. leukotoxin vaccine and
                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAT
                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7483
                                                                                                                                                                                                                                                                                                          60
              540
                                480
                                                   480
                                                                       420
                                                                                          420
                                                                                                           360
                                                                                                                               360
                                                                                                                                                  300
                                                                                                                                                                    300
                                                                                                                                                                                        240
                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                              180
```

Ś

밁

```
RESULT 9
AC127421/c
LOCUS
                REFERENCE
AUTHORS
TITLE
                                                                               REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                 TITLE
JOURNAL
     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                               Mus musculus I
sequence.
AC127421
AC127421.3 G:
HTG.
                Parkway, St. Louis, MO 63108, USA 4 (bases 1 to 170221) McPherson, J.D. and Waterston, R.H. Direct Submission
                                                                                                                                                                                                                              Sciurognathi; Muroidea; Muridae; Murinae; Mus. 1 (bases 1 to 170221)
Yoakum,M., Haglund,K. and Kozlowicz,A.
The sequence of Mus musculus BAC clone RP24-31
                                                                                 Submitted (15-JUL-2002) Genome
                                                                                                            3 (bases 1 to 170221)
McPherson, J.D. and Waterston, R.H.
                                                                                                                                              Sequencing of Mus musculus 
Unpublished (2001)
                                                                                                                                                                                  Wilson, R
                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
                                                                                                                                                                                                                                                                                                                                Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                               Unpublished (2001)
                                                                                                  Direct
                                                                                                                                                                                                                                                                                                                                                                                                                                                AC127421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGCTTGCAAAGCACTCTTTTAGCTTTTACAGGTTCTATTTCTCCTAT 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCCTAT 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGGAAAAAGAAACTTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGAGGGGAAAAAGAACTTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAAAAGCTATGGGAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAAAAGCTATGGGAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA
                                                                                                                                                                                               (bases 1 to 170221)
                                                                                                Submission
(18-JAN-2003) Genome Sequencing
                                                                                                                                                                                                                                                                                                                                                                                 GI:28201751
                                                                                                                                                                                                                                                                                                                                                                                                                                 BAC
                                                                                                                                                                                                                                                                                                                                                                                                                                 clone
                                                                                                                                                                                                                                                                                                                                                                                                                               170221 bp
9 RP24-314F1
                                                                              Sequencing
                                                                                                                                                                                                                                                                                                                                                                                                                                 from
                                                                                                                                                                                                                                                                                                                                                                                                                               linear
chromosome
                                                                                                                                                                                                                                 RP24-314F1
 Center,
                                                                                 Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                 18,
 4444
                                                                                                                                                                                                                                                                                                                                                                                                                                              ROD 13-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                 complete
 Forest
                                                                                 Forest
 Park
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              780
```

Ş 밁 5 밁

밁

Ś

밁 Ş B Ś 밁 S 밁 ક 밁 á 밁 Ş 밁

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                    COMMENT
                                                                                                                                                                      JOURNAL
                                                                                                                                                        Parkway, St. Louis, MO 63
5 (bases 1 to 170221)
McPherson,J.D. and Waters
Direct Submission
Submitted (04-FEB-2003) (
Parkway, St. Louis, MO 63
                                                         Parkway, St. Louis, MC 6 (bases 1 to 170221)
                                                                                                                                   Wilson, R
         Contact: submissions@watson.wustl.
Center project name: M_BB0314F01
                                                Center: Washington University Genome Center code: WUGSC
                                    Web site: http://genome.wustl
                                                                                                                                                                                            and Waterston, R.H
                                                                                                                                                                                                                    63108,
                                                                                                                                                                      Genome
                                                                                                                                                          USA
                                                                                                                                                                                                                     USA
                                                                                                                                                                      Sequencing Center,
                                      . edu
                           .
edu
                                                                                                                                                                      4444
                                                                                                                                                                      Forest
                                                                                                 USA
```

clone. It may be shorter because we only sequence overlapping clone sections once, or longer because we provide a small overbetween neighboring data submissions. This sequence may not represent the entire insert of this overlap

This sequence was finished as follows unless otherwise noted: all regions were double stranded, sequenced with an alternate chemistry, or covered by high quality data (i.e., phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by sequence from more than one subclone; and the assembly was confirmed by restriction digest.

MAPPING INFORMATION:
Mapping information for this clone was provided by Dr. Wes Warren,
Department of Genetics, Washington University, St. Louis MO. For
additional information about the map position of this sequence, se
http://genome.wustl.edu

SOURCE INFORMATION:
The RPCI-24 BAC Library has been constructed by Pieter de Jong and coworkers (http://www.chori.org) from male C57BL/6J mouse spleen and/or brain genomic DNA. The clone and detailed information can be obtained from Pieter de Jong and coworkers at http://www.chori.org Ď

FEATURES source NEIGHBORING SEQUENCE INFORMATION: This sequence is the entire inseroverlapped by AC116998. 1. .17022 Location/Qualifiers entire insert of the clone. This clone

repeat_region repeat_region repeat_region repeat_region repeat_region repeat_region repeat_region repeat_region /rpt_family="ERVK" 9669. .9781 /rpt_family="Alu" 9517. .9652 /rpt_family="B4" 9857._.10052 /rpt_family="ERV1" 11502. .11577 'clone="RP24-314F1" 'clone_lib="RPCI-24" map="18" mol_type="genomic DNA db_xref="taxon:10090" organism="Mus musculus" rpt_family="L1" chromosome="18" family="ERV1" 5. .11670 family="RMER1A" 1456

repeat_region

repeat_region

_family="MaLR' _family="MaLR'

family="B4"

.20925

repeat_region repeat_region repeat_region

family="MIR" 3. .24263 family="Alu"). .24043 _family="ERV1"

_famil

y="Alu"

/rpt_1 22395.

22448

repeat_region

repeat_region repeat_region repeat_region

family="ERVK _family="Alu"

.26253

repeat_region

/rpt_family="MIR" 27338. .27756 /rpt_family="Alu" 26483. .26644

/rpt_family="MaLR" 29190. .29265 /rpt_family="MaLR" 28247. .28690

repeat_region

/rpt_f 30206. /rpt_f 30685. /rpt_f, 31561.

family="Malk _family="ERVK family="ID"

/rpt_family="Alu" 32067. .32214

rpt_family="Alu" 2231. .32489

repeat_region repeat_region repeat_region repeat_region

repeat_region repeat_region repeat_region repeat_region repeat_region

/rpt_f

_fami]

mily="L1" .32715

/rpt_family="L1" 34679. .34935 /rpt_family="82" 33729. .34156

/rpt_family="B4" 35007. .35111

repeat_region repeat_region repeat_region repeat_region

/rpt family="Alu"
3981. .40047
/rpt family="B4"
40094. .40221

rpt_family="B4"

repeat_region repeat_region repeat_region repeat_region repeat_region repeat_region repeat_region repeat_region repeat_region

family="ERV1 _family="B2"

/rpt_family="82" 37961. .38151

/rpt_fa 37599.

family="Alu" 9. .37812

/rpt_family="Alu" 37058. .37192

rpt_family=";36828. .36900

_family="Alu"

/rpt_family="L1" 36329. .36437 /rpt_family="L1" 36037. .36186

/rpt_fami 39260. .3 /rpt_1 /rpt_fa 38477_

lly="82" 1y="B4"

repeat_region repeat_region

/rpt_family="ERV1" 14141. .14466 /rpt_family="ERV1" 11696. .11747

```
맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                           δ
                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                        밁
                                                                                       5
                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 1.4%; Score 131.6; DB 9; Length 170221; Best Local Similarity 42.0%; Pred. No. 1.2e-08; Matches 828; Conservative 0; Mismatches 1139; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              46416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46596 AAACAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAG 46537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    46476 TAGCAGTAGCAGAAGCTGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46536 TAGCAGTAGCTGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAG
                                                          46056 TAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAG
                                                                                                                                 46116 TAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTG
                                                                                                                                                                                                         46176 TAGCAGTAGCAGTAGCAGTAGCAGTAGCAGCAGCAGCAGTAGCAGTAGCAGAAGCTG
                                                                                                                                                                                                                                                                               46236 TAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                    16356 TAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6422 AGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAATTA 6481
                                                                                                                                                                                                                                                                                                                                                                                            6722 TGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGAAAAATTCTAAAATTATGA 6781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6602 TGGAAGAAGCAAAAATTTTGGTAAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6542 GAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6482 CAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCCGGGGTAG
                                                                                                                                                                                                                             6842 CAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTTGGAGTGGTTTCTGTCAATAATATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              6662 TTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAG
7022 CAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTTC 7081
                                                                                                                                                                                                                                                                                                                CTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGTT 6841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                           TAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAGCTGTAGCAGTAGCAGTAGCAG
                                                                                             TAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTTG
                                                                                                                                                                    CANATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCTTCTACTGATGTAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_family="L1"
44495. .44622
/rpt_family="L1"
44605. .46597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              41171. .41265
/rpt_family="B4"
43685. .43977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /rpt_family="L1"
47292. .47735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /rpt_family="B2" 44245. .44485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_family="RMER6A" 52033. .52749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /rpt_family="151688. .51899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /rpt_family="L1"
50218. .50366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="ERV1"
48245. .48397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /rpt_family="MaLR"
47832. .47886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Unresolved tandem repeat." 46582. .47097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /rpt_family="L1"
44014. .44224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt_family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     family="B4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                  6901
                                                                                                                                                                                                                                                                                     46177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    46477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46417
                                                              45997
                                                                                                                                     46057
                                                                                                                                                                                                             46117
                                                                                                                                                                                                                                                                                                                                                                 46237
```

```
45516
                                                                                                                                                                                                                                                                                                                                                                                            45096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     45276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    45336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               45816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGCAGCTAGCAGTAGCAG
AAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGAAATGAATTCAGAGGTTGAAATTGAGAAGATATTTTCAATGAAGAAAATAGAGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGCTGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGCAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTAAGCTATTAGGAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGGAAAAATGTAGATATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGCTACGAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAAGTAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGTCTTGGTAAATAATTTTGGAACAGCTGTAGAAGATAGAAAAATTCTGAAGGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAATATTAAGCAAACAGCAGCAAA---TGCAGGAATCGGAGGAGCAGCAATCGGAGCCA 7198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAAA 7141
                                                         TTCATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTA 8158
                                                                                                                            TAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAG
                                                                                                                                                                                            AAGCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTT
                                                                                                                                                                                                                                                        TAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAG
                                                                                                                                                                                                                                                                                                    TGACTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCG
                                                                                                                                                                                                                                                                                                                                                                                        TAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTAGCCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAGAAAACAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGGATATTACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAA 7678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGGAACTGCAGGTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAA 7558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGGATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTA 7438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAGCAGTAGCAGTAGCAGTAGCAGAGCTGTAGCAGTAGCAGTAGCAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAG 4587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAG 4545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7798
                                                                                                                                                                                            8098
                                                                                                                                                                                                                                                        44977
                                                                                                                                                                                                                                                                                                                        8038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        45097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              45277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7378
                                                                                                                            4491
                                                                                                                                                                                                                                                                                                                                                                                        45037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              45337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45697
```

밁 Ś 밁 S 밁 र् 밁 Ś

밁 S 문

ş 밁 Ś 밁 Ş S

片

片

Ş

밁 ঠ 밁

44857

7555

Ś

밁 Ś 밁 밁 á 밁 8 멍 Ś 밁 Ś

Ś

밁

```
REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
AC024253/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        44796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               44856
                                                                                                                                                                                                                                        Sequencing vector: plasmid; 0%
Chemistry: Dye-primer ET; 100% of reads
Chemistry: Dye-terminator Big Dye; 0% of reads
Assembly program: Phrap; version 0.990319
Consensus quality: 175235 bases at least Q40
Consensus quality: 17522 bases at least Q30
Consensus quality: 177171 bases at least Q30
Consensus quality: 177171 bases at least Q20
Insert size: 198000; agarose-fp
Ouality coverage: 4.88 in Q20 bases; agarose-fp
Quality coverage: 4.99 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
Submitted (28-FEB-2000) Genome Sequencing Center, Washington University School of Medicine, 4444 Forest Park Parkway, St. MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          179553 bp
Homo sapiens chromosome 6 clone
SEQUENCE, 12 unordered pieces.
ACO24267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequencing vector: M13; 100%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Center project name: H_NH0758C19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center: Washington University Genome Center code: WUGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 (bases 1 to 179553) Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 179553) Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Web site:http://genome.wustl.edu/gsc/index.shtml
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               용정
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The sequence of Homo sapiens 
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HTG; HTGS_PHASE1; HTGS_DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AC024253.4 GI:9959959
                                                                                     NOTE: This is a 'working draft' sequence. It currently consists of 12 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAG
                                           as soon as it is available and the accession number be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGCAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGGAAATGGAGGAGTTGCCGGAGCAGGAGTGAATACTTCTACAGCA 8388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAGCTGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGGTAAAACTATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTAT 8338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1, 2000 this sequence version replaced gi:8568958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----- Genome Center -----
7554: contig of 7554 bp in length 7654: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Information -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RP11-758C19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequencing Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear 1
9, WORKING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HTG 01-SEP-2000
DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Louis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               44797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     44677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          44737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8278
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                               gap
                                                                                                                                                                                                                                                                                                                                                                                    gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
gap
                                                                   gap
                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                misc_feature
                                                                                                     misc_feature
                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 90566
117184
117284
113020
163120
163120
166939
167039
169313
169313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7655
16350
16450
26476
26576
35881
35981
62011
62011
                                                                                                                                                                                                                                                                                                               /estimated_length=unknown
90666. .117183
/notee"assembly_name:Contigl6"
117184. .117283
                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_name:Contig14" 62011. 62110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_name:Contig12"
26476. .26575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location,
                                                                                                   vector side:right"
166939. .167038
/estimated length=unknown
167039. .169312
                                                                                                                                                                         clone_end:T7
                                                                                                                                                                                                           /estimated_length=unknown
163120. .166938
                                                                                                                                                                                                                                                                                                                                                                                    /note="assembly_name:Contig15"
90566. .90665
                                                                                                                                                                                                                                                                                                                                                                                                                       /estimated_length=unknown62111. .90565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            35981. .62010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="assembly_name:Contig13"
35881. .35980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26576. .35880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'note="assembly_name:Contig10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               organism="Homo sapiens"
/mol_type="genomic DNA"
 /note="assembly_name:Contig7"
171640. .171739
                                /note="assembly_name:Contig6"
169313. 169412
/estimated_length=unknown
169413. 171639
                                                                                                                                                                                                                                                            /note="assembly_name:Contig17"
                                                                                                                                                                                                                                                                                /estimated_length=unknown
117284. .163019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /estimated_length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 estimated_length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  estimated_length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note="assembly_name:Contig11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7655. .16349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         estimated_length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             clone="RP11-758C19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             db_xref="taxon:9606"
                                                                                                                                                                                         /note="assembly_name:Contig8
                                                                                                                                                                                                                                               163020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62110: Gap of unknown length
90565: contig of 28455 bp in length
90665: gap of unknown length
117183: contig of 26518 bp in length
117283: gap of unknown length
163019: contig of 45736 bp in length
163119: gap of unknown length
166938: contig of 3819 bp in length
167038: gap of unknown length
167038: gap of unknown length
169412: contig of 2274 bp in length
171639: contig of 2277 bp in length
171739: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .179553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16349: contig of 8695 bp in length
16449: gap of unknown length
26475: contig of 10026 bp in length
26575: gap of unknown length
35880: contig of 9305 bp in length
35980: gap of unknown length
62010: contig of 26030 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .7654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .26475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .16449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /Qualifiers
                                                                                                                                                                                                                                              .163119
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                            밁
                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matcheв 1459;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                176404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       176224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      176284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   176344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               176464
175624
                                                                                                                                                           175744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            176044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           176104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          176164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5233 GCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAA 5292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACA 5472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTAGAAGCATCAGTGACAACAGCAGCAGTAACAACAACAAAAAGCAACAGCAGCAACAATA 176345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAGCAATAGTAGCAACAGCAACAACAGTAATTACAGCAGCAACTGCAATAGCAACA 176405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAATCAGTTATAGCTATTGTAAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGA 5352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGCTGGAGGAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAGCAGCAGCAGCAACAGCAACAGCAGCAACAATAACAAAAGCAACAGAAACAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAGCAACAGCAATAGCAACAATAGGATCCTCAGTAGTAACAGCAATAGCAACAGTAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGA 5532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTAATAGCAACAGCAACAGTAACAGTAGCAGCAACAGATATGGCAACAGTAATACCATCA 176285
GCAGCAGCAGCATCAGCAACAGCAATAGTATCACGATTAACAGCAGCATCAATAGCCACA 175565
                                     GAAAAATAAGTAATAAAAAAGGATTTGTTACCAATAGT-----TCAGCTACTCAT 6174
                                                                                                              GTGGTAGATAAAGTA----TTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAA
                                                                                                                                                         GCAGTAACAACAGCAATAGCAGCAGCAACAATAATAGCAGCCACAGCATCAGTAGCAGCA
                                                                                                                                                                                                                                      GTAGCAGCAACAGCAATAGCAACAGTAGCAGCATCAGCAACAATAACAGCAACAATAGCA 175745
                                                                                                                                                                                                                                                                     GGAGCCTCAACCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCT
                                                                                                                                                                                                                                                                                                                   GTAGCAACAACAGTAGCAGCAACACCAGCAGCAGCAGCAGCAGCAATAGCAACAGTAATA
                                                                                                                                                                                                                                                                                                                                                           TCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATA
                                                                                                                                                                                                                                                                                                                                                                                                  GAAGTAGCAGTAGTAATAGCAGCAACAGCAGCAGCAGCAGCAGCAATCATTACCATA 175865
                                                                                                                                                                                                                                                                                                                                                                                                                                      ATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATAGCAAAATCAGCAGTAGCAACAACAGCAGTCGCAGCAATAACAGCAGCAGCAGCAACA 175925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAACAGAATCAACACCATCACAATTAAGAGCAACAACAGCAGCAACAATAGCCACAGAA 175985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTTTGGTAAAAAGCAAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTT 5769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACAACAAAACCAACAATAGCAACAACAGCAGCAACAATTTTTAGCAATAGCAGCAACAATA 176045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGG---AGCTGGAGTAGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACACGAGCAACAGCAGCAACAATAGTATCAGTAATAGCAATAGTAACAGTAACAGCA 176165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAAT 5592
                                                                                                                                                                                             acagtgattgctaaagaagaaacagatgattatattactactcaagggcaagtagataaa
                                                                            GCAGCAACAAGAGCAACAATTACAAAAGCCACAATAGNCACAGTAGCAGNCACAGCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /estimated_length=unknown
171740. .179553
/note="assembly_name:Contig9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 130.2; DB 14; Pred. No. 1.9e-08; 0; Mismatches 2025;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 179553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5412
                                                                                                                        6124
                                                                                                                                                                                                     6069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              176105
                                                                                                                                                              175685
                                                                                                                                                                                                                                                                                  6009
                                                                                                                                                                                                                                                                                                                       175805
                                                                                                                                                                                                                                                                                                                                                                                                                                              5889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          176225
                                                                                 175625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7;
```

Qy 6595 Db 175144 Qy 6655 Db 175084 Qy 6712 Db 175024 Qy 6772 Db 174964 Qy 6832 Db 174904 Qy 6892 Db 174784 Qy 6952 Db 174784 Qy 7012 Db 174664 Qy 7132 Db 174604 Qy 71554	
GTAGATGGAAGAAAAAAAAAAAAAAAAAAAAAAAAAAA	ACTITAAAATCTTTATI
6595 AGTICTITGGAAGACCACCATTACCACCACCACCACCACCACCACCACCACCA	6175 ACTITAAAATCITTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACT 6234
GCTGAGATTACAGCAGAAA GCTGAGATTACAGCAAAA GCTGCAAAAGCAACAGCAATA GCTGCAAAAGCAACAGCAATA GCTGCAAAAGCAACAGCAGTA ACAGCAACAGCAACAGCAGTA ATAATTACCATAGTAGTAGCAG GCAACAGTATTACCATAGTAGCAG GCAACAGTATTACAGTAGTAGTAG GCAACAGTATTACAGTAGTAGCAGCAGTA ACAGCAACAGTAATAGCAGCAGTA ACAGCAACAGTAGTAGCAGCAGTA ACAGCAACAGTAGTAGCAGCAGCAGCAGTAGTAGCAGCAACAGTAGTAGTAGCAGCAACAACAGTAGTAGTAGTAGTAGTAGTAGTAGTAGTAGTAGTAGTA	GGACAAGCCGGAGTAGCACACACAGCAGCAAGCAGCAGCAGCAGCATATACAGTAGCAGCAGCATATACAGCAAGCA
ACAACA 175145 CGTTAT 6654 GCAACA 175085 GGAATT 6711 GCAACA 175025 AATTCT 6771 ACAACA 174965 ACAACA 174965 ACAACA 174905 TCTGCT 6891	GGAACT 6234
5 5 <th>8 8 8 8 8 8 8 8 8 8 8 8</th>	8 8 8 8 8 8 8 8 8 8 8 8
7672 TTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAATATCAGTATT 7731 174070 ACAACAGCAACAGCAACAGCACAATAGCAACAATTACAAAAGCAACAATTGCAACAATTACAAAAGCAACAATTACAAAAGCAACAATTAGCAACAATTAGCAACAATTAGCAACAATTAGCAACAATTAGCAACAATTAGCAACAATTAGCAACAATTAGCAACAATTAGCAACAATTAGCAACAATTAGCAACAATTAGCAACAATTAGCAACAATTAGCAACAATTAGCAACAATTAGCAACAACAACAACAACAACAACAACAACAACAACAACA	
TYGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATT 7731 ACAACAGCAACAGCAGCAGCAGCAGCAACAGCAACAAAGCAAAAGCAACAA	

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PFAMESA
LOCUS
DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        გ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                           SdO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         173410 AAAGCAACAACAACAGCAATAGCAGCAGCAATCATAACAGCAATAGCAGCAGCAGCAACA 173351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             erythrocyte surface antigen.
Plasmodium falciparum (malaria parasite P. falciparum)
Plasmodium falciparum
Endesmodium falciparum
Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium
1 (bases 1 to 4995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      binds human erythrocyte protein 4.1
Mol. Biochem. Parasitol. 50 (2), 335-347 (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               M69183.1 GI:160408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                M69183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Original source text: Plasmodium falciparum (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Repeat structures in a Plasmodium falciparum protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Coppel, R.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PFAMESA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTTCAGCAACAGCAGCAGCAACAGCAACAGCATCGTAGTCAACAA 173002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTAACAGTAGCAGCAACATCAGCAGTAGTAACAACAGCAGTTGCAGTAGCAATAGTGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAACAGTAGCAGCAGTGÁCAGCAATAGCAACAGCATCATAATCAACAATGGCAATAACA 173231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTAT 8433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAACAGCAGCAGCATAGTAGTAGCAATGACAACAGCATTAACAACAACAGCAACA 173051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACT 8673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAGAAGCAGCAGCAACAACAAAAGCAACAATAGCAGCAATAGTAGCAGCAACCACAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACGGCAGTAACAATAGCAGTAATGACAACATCAGCAACAGTAGCAGCAACAACAGTGTCA
/translation="MENEGNKVKKVYNNSSLKKYMKFCLCTIICVFLLDIYTNCESPT
/SYSSIKNNNDRYVRILSETERPMSLEBIMKTEDDHLYSIRWYIECLRNAFYIDDFL
WGSVVTDKRNNCLQHIKLEMCESERRRKQQEENAKDIEBIRKEKSYLMKELEEMD
ESDVEKAFRELQFIKLRDRTRPRHKYNVMGESKETDESKETDESKETGESKETGESKE
TGESKETGESKETGESKETGESKETGESKETGESKETDESKETOESKETOESKETOES
KETGESKETGESKETGESKETGESKETGESKETGESKETOESKETOESKETOES
KETGESKETGESKETGESKETGESKETGESKETRYNKIISEFRETNVNLTE
ESKOREGNKYGGPYENSENSHYNTSESEETKKLAFKEENBEGEKLGENVNDGASENSED
KKLTEQEENGYNGGPYENSENSHYNTSESEETKKLAFKEENBEGEKLGENVNDGASENSED
KKLTEQEENGYNGGPYENSENSHYNTSESEETKALAFKEENBEGEKLGENVNDGASENSKU
GGGDKEDVKEKNDEGKDKVLGFENBKKADNKKKSKKKKSFPQMLGCNFLCNKNIE
TDDEBETLVVRDDAKKKHKFLFBANTEKNDNEKKDKLUGSEKTQKEIKENDTECNDKVKGP
KKCKKKVKGIKENDTGGNDKVKGPEIIEVNERIKKQVEDGIKENDTECNDKVKGP
EIITEEVKEEIKKQVEDGIKENDTEGNDKVKGPEIITEEVKEEIKKQVEGIKENDTECNDKVKGP
EIITEEVKEEIKKQVEDGIKENDTEGNDKVKGPEIITEEVKEEIKKQVEGIKENDTECNDKVKGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                             /protein_id="AAA29651.1"
/db_xref="GI:160409"
                                                                                                                                                                                                                                                                                    /product="mature-parasite-infected erythrocyte surface
                                                                                                                                                                                                                                                                                                                                                                                                                                         mo1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1. .4995
                                                                                                                                                                                                                                                                                                                                           join (278.
                                                                                                                                                                                                                                                                                                                                                            gene="MESA"
                                                                                                                                                                                                                                                                                                                                                                              db_xref="taxon:5833"
|oin(278..379,502..
                                                                                                                                                                                                                                                                                                                                                                                                                                                          organism="Plasmodium"
                                                                                                                                                                                                                                                                                                      codon_start=1
                                                                                                                                                                                                                                                                                                                         'gene="MESA"
                                                                                                                                                                                                                                                                                                                                                                                                                     strain="D10"
                                                                                                                                                                                                                                                                                                                                                                                                                                     _type="mRNA"
                                                                                                                                                                                                                                                                                                                                             379,502.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4995 bp
(MESA) mRNA
                                                                                                                                                                                                                                                                                                                                               .4932)
                                                                                                                                                                                                                                                                                                                                                                                  .4932)
                                                                                                                                                                                                                                                                                                                                                                                                                                                          falciparum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear INV 26
1-2, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D10)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INV 26-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (MESA) that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ដ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               173171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         173111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                    밁
                                                                                                                                                                                    ş
                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                   S
                                                                                밁
                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 1032; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       intron
                                                                                                                                                                                                                                                                                                                                                                                    1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1596
```

```
1542 TAATGATGGGGCATCAGAAAATTCAGAAGATCCC-----AAAAAATTAACAGAACAAGA
7710 TGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGATGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              agaaaaagtaaatgtaacggcaaaagaggaaaaaaatattaagcaaacagcagcaaatgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAAAATCTTACAATCAGCAGG
                                                                                                                                                                                                                                                                                                             GGTAGTAAAAGATGATGCTAAAAAGAAACATAAATTTTTAAGAGAAGCTAATACTGAAAA
                                                                                                                                                                                                                                                                                                                                                                               AGGATGTAATTTCCTATGTAATAAAAATATTGA---AACTGATGAAGAAGAAAACGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAGACCAAAAATTAGCCGAAAAAGAGAGGAGAATGAGGGAGAAAAATTAGGAGAAAATGT
                                                         ATATCAAGGTCCTGTAGGAGCATTGGGAATTAGGAGCTGCCTATGCAGAATTAAATTCTAA
                                                                                                   AAAGAATGATGAACAGAAAGATAAAGTATTAGGAGAAGGAGATAAAGAAGATGTTAAAGA
                                                                                                                                   GAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAACAGC
                                                                                                                                                                     AAAGAATGATGAACAGAAAGATAAAGTATTAGGAGAAGGAGATAAAGAAGATGTTAAAGA
                                                                                                                                                                                                      AACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTGT
                                                                                                                                                                                                                                        CAAGAATAATATCACTTCTACTGGTGGTTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGG
                                                                                                                                                                                                                                                                                                                                               TAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                 TATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAAATGGTACAAAGGAAAGTTCTGAAGAAACAAAAGATGATAAACCGGAAGAAAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAAGATAGAAAAATTCTGAAGGAAAAAGGAACAGAAGTTTTAAAAAACTTTAGACGAAGT
                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /number=1
502. .4932
/gene="MESA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /number=1
380. .501
/gene="MESA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FNVIFGDDTMFKFIDE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'number=2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene="MESA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 123; DB 2;
Pred. No. 6.3e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches 1290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 4995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
   7769
                                                                      7709
                                                                                                                                       7649
                                                                                                                                                                         1952
                                                                                                                                                                                                                                             1892
                                                                                                                                                                                                                                                                                                                  1832
                                                                                                                                                                                                                                                                                                                                                 7469
                                                                                                                                                                                                                                                                                                                                                                                     1772
                                                                                                                                                                                                                                                                                                                                                                                                                       7409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7169
                                    2072
                                                                                                      2012
                                                                                                                                                                                                           7589
                                                                                                                                                                                                                                                                              7529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7349
```

S

밁 Ś 밁 δ

밁 S

밁

```
2595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAAAGTGAAAGGGCCAGAAATAATAACTGAAGAAGTAAAAGAAGAAGTTAAAAAAACAAGT
GAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAA
                                                               AAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAA
                                                                                                                                                                                              CAAAGATAAAGAGATAGAACAAGAAAAAAGAAAAAAGAAGATTAAAGAAAAAAGAAGAGT
                                                                                                                                                                                                                                                          TACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGC
                                                                                                                                                                                                                                                                                                                                                                                     AGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGTCCCGAAAACAAAGATAAAGTGACAAAACAGGAAAAAGTAAAAGAAGTTAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACTGAAAGTAAAGATAAAGTGATAGGAGAAGAAGTGATAAAAGGAGATGTTAATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAAGGAATTAAAGAAAATCATACTGAAAGTAAAGATAAAGTGATAGGACAAGAAATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGGAGC 8366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACATAAAATGAAAGTAACAGCAG---TTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAAGAAGGAATTAAAGAAAATGATACTGAAGGTAACGATAAAGTGAAAGGGCCAGAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAAGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAAGAAATTAAAAAAACAAGTAGAAGATGGAATTAAAGAAAATGATACTGAAGGTAACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCTGTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAATGATACTGAAGGTAACGATAAAGTGAAAGGGCCAGAAATAATAACTGAAGAAGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATTATGAAAATAATGATTACACAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAATTGAAAAACAAGAAGAAAAAGGAAATAAGAAAATATTCTTGAAATTAAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGA 8306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGATACTGAAAGTAAGGATAAAGTGATAGGACAAGAAATAATAACTGAAGAAGTAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATAACTGAAGAAGTAAAAGAAGAAATTAAAAAACAAGTAGAAGAAGAAGGAGTTAAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCAGTAGCAGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCCGGAGCCATTATCTCAAAAGCAAAGAATGAATGAATTCAGAGGTTGAAATTGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCGGTAGC
                                                                                                                                                                                                                                                                                                                         8786
                                                                                                                                                                                                                                                                                                                                                                                        8726
   8906
                                                                                                                                                                                                                                                                                                                         3071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2189
```

S 밁 ş В S

밁

```
밁
                  á
                                          밁
                                                        δ
                                                                                                     ঠ
                                                                                                                               밁
                                                                                                                                              ş
                                                                                                                                                                    밁
                                                                                                                                                                                         S
                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                        문
3792
                                                                                    3672
                                                                                                         9315
                                                                                                                               3612
                                                                                                                                                     9257
                                                                                                                                                                         3552
                                                                                                                                                                                              9197
                                                                                                                                                                                                                   3492
                                                                                                                                                                                                                                        9141
                                                                                                                                                                                                                                                                                                         3372
                                                                                                                                                                                                                                                                                                                              9021
                                                                                                                                                                                                                                                                                                                                                    3312
                                                                                                                                                                                                                                                                                                                                                                          8967
                                                                                                                                                                                                                                                                                                                                                                                                                                        3192
AAAAATGAAAGAAAAGATGTGATAGA
                    TAAAAATTATAATATAAGTAAGACAAA
                                                           TGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGA
                                                                                                                                                                                                                                                                                                                                                                                                              AAAAGAAGAAGTAAAAGAAAAAGAAGAAGAAAAAAAAGATACCGAAAGCATAA
                                          AGAAGAAGTTAAAAAAAGAGTAAACAAAGAAGTTAACAAAAGAGTAAACAGAAGAAATAG
                                                                                    AGATACCGAAAGCAGAGATAATGTGATAGTACAAGAAATAATGAACGAAGATGTTAACGA
                                                                                                                                                                         TTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAATA
                                                                                                                                                                                                                                        AGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATT----TCCAATGAGATGGATA
                                                                                                                                                                                                                                                               TACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGG
                                                                                                                                                                                                                                                                                                         AAAAAGAGTAAAAAAAAGAAATAATAAAAATGAAAACAAAGATAATGTGATAGTACAAGA
                                                                                                                                                                                                                                                                                                                            AAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAAC
                                                                                                                                                                                                                                                                                                                                                    TCTACAAGGAAAAAGTGGTGGCTATGGTGGAAT----TGGTATTGGAAATGTTGATGT
                                                                                                                                                                                                                                                                                                                                                                                              ATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAA--TGTTCATGGGGTGGCTGAAGC
                                                                                                                                                                                                                   3818
                    9461
                                                                                    3731
                                                              9434
                                                                                                                               3671
                                                                                                                                                                                                                                        9196
                                                                                                                                                                                                                                                             3491
                                                                                                                                                                          3611
                                                                                                                                                                                               9256
                                                                                                                                                                                                                                                                                   9140
                                                                                                                                                                                                                                                                                                                                                   3371
                                                                                                                                                                                                                                                                                                                                                                                                                                        3251
```

TITLE
JOURNAL
PUBMED
REFERENCE
AUTHORS
TITLE

ঠ 맑 Ş 밁 Ś 밁 ঠ 밁 ð B

á 밁 중 유 S 밁 S 밁 Ş 밁 ર્ В S

ACCESSION VERSION KEYWORDS RESULT 12 AE014843 LOCUS SOURCE ORGANISM REFERENCE DEFINITION AUTHORS JOURNAL Plasmodium falciparum 3D7

SM Plasmodium falciparum 3D7

Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.

Earthory, M., Pain, A., Fung, E., White, O., Berriman, M., Peterson, J., Angiuoli, S., Pertea, M., Allen, J., Selengut, J., Haft, D., Angiuoli, S., Pertea, M., Allen, J., Selengut, J., Haft, D., Mather, M.W., Vaidya, A.B., Martin, D.M.A., Fairlamb, A.H., Fraunholz, M.J., Roos, D.S., Ralph, S.A., McFadden, G.I., Cummings, L.M., Subramanian, G.M., Mungall, C., Venter, J.C., Carucci, D.J., Hoffman, S.L., Newbold, C., Davis, R.W., Fraser, C.M. and Barrall B.J., Hoffman, S.L., Newbold, C., Davis, R.W., Fraser, C.M. and Gardner, M.J. Direct Submi Submitted (1 Barrell, B.

Genome sequence of the human malaria parasite Plasmodium
Genome 419 (6906), 498-511 (2002) complete sequence. AE014843 AE014186 AE014843.1 GI:234 AE014843 271546 bp DI Plasmodium falciparum 3D7 chromosome 12368864 (bases 1 to 271546) Submission ted (13-SEP-2002) GI:23496380 The Institute for Genomic DNA linear INV 07-OCT-2002 ne 11 section 8 of 8 of the Research, falciparum 9712

reneat region 3714 3748	/db xref="GI:23496381"	
/rpt/ /rpt	/codon_start=1	
_	15342550 /locus_tag="PF11_0457"	CDS
repeat_region complement(3578.	/locus_tag="PP11_0457"	MRNA
/rpt_type=tandem	/locus_tag="PR11_0457"	9011
region	/rpt_unit="(a)n"	201
<pre>/rpt_type=tandem repeat_region 35033555</pre>	~ ^	repeat_region
repeat_region complement(3414/note="AT_rich"		repeat_region
	/rpt	repeat_region
repeat_region complement (33503401)	/rpt_t	
repeat_region 33503401	/ pt_unit="(ta)n"	
	complement(13461412) /rpt_type=tandem	repeat_region
<pre>repeat_region complement(32213263)</pre>		
	٥.	repeat_region
/rpt_type=	/rpt_type=tandem	
repeat_region complement(3113313/) /note="AT_rich"		repeat region
/rpt_type=tandem		repeat_region
<pre>repeat_region complement(30273056) /note="AT rich"</pre>	/rpt_type=tandem	i
/rpt_unit="(ta)n"	٥ \	repeat region
repeat_region complement (29903019)		repear_regrou
	/rpt_type=tandem	rebear regrou
	/rpt]	
<pre>/rpt_unit="(ta)n" repeat_region complement(29292962)</pre>	compi	repeat_region
/rpt_type=tandem	/rpt_type=tandem	ToTBar_redar
tregion	/rpt_	
repeat_region 28432881	/rpt type=tandem	repeat_region
i	= 3	
repeat region complement(2750	complement(485504)	repeat_region
	/rpt_unit="(ta)n"	
	complement (426445)	repeat_region
repeat_region 27202748	/rpt typestandem	repeac_regron
repear_regrou comprement rich" /ret trace_tandam	17,5	
	complement (313373)	repeat_region
<pre>repeat_region 25752620</pre>	/rpt type=tandem	repeat_region
/rpt_type=tandem	/rpt_unit="(ta)n"	
region com	complement (130207)	repeat_region
/rpt_type=tandem repeat region 25442577	/rpt type=tandem	repeat_region
repeat_region complement(1//ooso) /note="AT_rich" /note="AT_rich"	¥ £	
TNTQNPTELCKTYKLNP	-	
TIME CHEWARD FOR THE TOTAL PRODUCTION OF THE TOTAL PRO	12/1546 /organism="Plasmodium falciparum 3D7"	source
NLDTNNI I EKELMYKDUSI I QEEKI INDCSYDICDYITN	Location/Qualifiers	FEATURES

LNGINITIIDNNIVDEEDIENIFFLNEHDMKEYMSVPIFKELKSINQLINIKSFIGHI KILDTUNIIIEKELMYKDNEIIQEKKIINDCSYDICDYINYTCVCISCEDYPLYKLTK INEICHEKUIGFFAMNCHGKYAFLFSDFGKHIESESYKYKIKNDDNKKGNDNSIEVOYC TLSHFLKVPFSNLDKKTNDIIYVPALILYEQDKKMNKQNKQIDEQEFLNFYNKLANK TNTQNPTELCKTYKINFSPSCSIMGGVTSQEIRKFISRQHESIPNFCVPDMNQNIVCT

```
밁
                                                                                   S
                                                                                                                             밁
                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
  ş
                                                                                                                                                                     Ś
                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 1.2%;
Best Local Similarity 42.8%;
Matches 1766; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SgS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             188890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     188770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5120 ATCGTGGTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTT
                                                                                                                             ATAATCTAATATACGAAAAAATAAATGAAGAAGTTGAAAAAGCAAAATTTCAAGAAGAA 189249
                                                                                                                                                                                                                                                                                                                                                                                                                              GAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTTGGAAAACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTACTGAAGTAGTTGTAGAAGAAGATCAGCTACTGAAGAGGTTGTAGAAGAAGAACGATCAG 188829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATACTGAAATTGTTGTAGAAGAAGGATCAGCTACTGAAATTGTTGTAGAAGAAGGATCAG 188769
  TGGTAAAAAGCAAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAG 5773
                                                                             AAATTACACAAAATACTTCTGCACATATAAAAAATTAGTACTCAAAATGTACGAAATGCTT
                                                                                                                                                                                                                 TACCAACAGAATATATTACTACTGCTGATATACACACTAAAGGTGAAACAGAAACAAAAT 189189
                                                                                                                                                                                                                                                                                                     TAAATTCGGAAGATATTAATGAACATACTCCATTAGAAGAAACGAAAATTGAAGAAT
                                                                                                                                                                                                                                                                                                                                          CTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGAAATA 5536
                                                                                                                                                                                                                                                                                                                                                                                      TTGTTGATGATGAGTCCTTTAAAGGACAAGGACCTACAGATAATGTATCAGTCGAAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGTAAAAACAGCTAAGGATGAATCTATGAATGAAAAAATACCATTAGAGAAATCATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATCTAGTGATAATGTTCAAAAGGTCAAAAGGAGTAATTGAAAACGTAGGAAATATATT 188949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTCTGAAGAATGTTAGAAGAGGAAGGATCAGCTACTGAAGAAGTTGTAGAAGAAGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTTCAATGTAGATGCAAAAGATCAAAAAACAATAAATACAATTGCCGGAAATG---CAA
                                         AAATTACCGAAAATATTCCAGTAGAAAGAGAATCAGTTACAGAAGATATAGTACAAGAAC 189309
                                                                                                                                                                       CGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATA
                                                                                                                                                                                                                                                        AGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGA---GTCAAGTGGTCACAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /rpt_type=tandem complement(4068..4164) /note="AT_rich"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
/product="hypothetical protein"
/protein_id="AAN36038.1"
/protein_id="AAN36038.1"
/db_xref="01:23496382"
/translation="mMNSKENDSVSKLSFKNKNIKLIKVPKFVSNKWLQYNNKDIVGL
LGCNNNNNNDSEITELYVQKDDSDNVKKLRCNKNNTVNTYILKQNVIKLKSTNKSVSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /locus_tag="PF11_0458"
4155. .5108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_type=tandem
complement(4087. .4119)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement(3942. .3967)
/note="AT_rich"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /rpt_type=tandem
complement(3873.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement (3760. .3796)
/note="AT_rich"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <4155. .>5108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /locus_tag="PF11_0458"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /rpt_unit="(t.
<4155. .>5108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              locus_tag="PF11_0458"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            type=tandem
unit="(taaa)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cype=candem
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 121; DB 2; Length 271546;
Pred. No. 2.6e-07;
0; Mismatches 2265; Indels 96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .3924)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19;
                                                               밁
                                                                                                á
                                                                                                                                               밁
                                                                                                                                                                                    5
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   189907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    189310 CATCATTAGCTCAGGAAGTTGAACAAAAAGAATCAGATACTAATGAAATTGAA---GAAA 189366
                                                                                                                                                                                                                                                                                                                        190147
                                                                                                                                                                                                                                                                                                                                                                                                                                                    6476
                      6764 AAAATTCTAAAATTATGACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAAT 6823
                                                               ATCACGGATCATTTGCTGAAGAAGTCAAAGAAGAAGAATTAGTTACAGAAGAAGCTGTAC 190386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGAAGAAATTGTAGAAAAAGTTGGATCAGTTTCTGAAGAAATAATAGTAGAAGAAGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGACAAGAGTTGGAAAAACTA----CAATGTCTGATGAAGGTTTCGGAGAAGAAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAGAAGATGTTGGÁTCÁAÁTGTTGAAGÁAATÁGTACAGGAÁGAÁGGTCCTGTTGCTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAATAAGTAATAAAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAAATGTCGGAGTTATTACAGAGTCTG
                                                                                                                                                                                                                                       AATTAATTAATGAÄGTTGGTGAÄÄCCGAATCGGTTÄCTGÄÄGAAATÄGTÄCÄAÄAAAGÄÄG
                                                                                                                                                                                                                                                                                                                                                              GGGTAGGAGCCGGAGCAGGAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                            CÁGCTTCTGAAGAAATAGTAGAAGAAGGATCAGTTACTGAAGAAGTTGTAGAAGAAGAAGAAA 19014
                                                                                                                                                                                                                                                                                                                                                                                                                                                  G---TGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATATTATAAAAAGAAATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGTTTATGGA---GAAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATCTAGTGAAGAATAATAGAAGAAGTGTCAAGTACTGAAGAAGTCTTAGAAGAAGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGTGGTAGATAAAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAAGAA 6127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGAAGAAATAGTAGAGGAGGAAGAATCATCTAGTGAAGAAATAGTAGAGGAGGAAGAAT 18966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGATTGCTAAAGAAGAAACAGATGATTATATTACT-----ACTCAAGGGCAAGTAGATA 6067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAATÁGTAGAGGAAGAAGAATCATCTAGTGAAGAAATAGTÁGAGGAAGAAGAATCATCTA 18960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTCAACCAGTGTAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAGAAGAAGAAGTATCATCTAGTGAAGAAATAGTAGAGGAAGAAGAATCATCTAGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGAAGGATTAGATACTGAAGAGGTCTTAGAAGAAGATGAATCAATTACTGAAGAAATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTAAATTAGCTAATGAAAAAATTATACCAGAAGTATCTGTTACTGAAAACGTTGTTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGGAGGAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAG
                                                                                                         GAATTGGAGCA---GCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGA 6763
                                                                                                                                                 AAGAATCAATTGTTGAAGAAATTGTTGGACCGGAAGGATCTGTTACTGAAGAAATAGTAG
                                                                                                                                                                                           AACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTG
                                                                                                                                                                                                                                                                            TAGATGTGGAAGAAGCAAAGATTTTGGTAAAA-----AAAGCTGAGATTACAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACAACAAGGATCTGTTATTGAAGAAATTGTAGAAACAGAATCATCTACTGAAAAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGGATCAGTTAGCGAAGAGGTATTAGAAGAAGAAGGATTCGGTACTGAAGAATTTGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATTOGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATCGGTTACGGAAGAAATTGTAGAGGAAGAAGTATCAACTACTGAAGAAGATTAAAGATA 189786
6421
                                                                                                                                                                                             6706
                                                                                                                                                                                                                                       190266
                                                                                                                                                                                                                                                                                 6646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                190086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               190026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       189906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           189726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    189546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       189426
                                                                                                                                                                                                                                                                                                                        190206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     189966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      189486
```

7004 GAGGAGCCCAGGTCTTGCAGCAGTTACCGAGTGGTTTCTGTTAACACTATAATAGT 7063 190627 CTGAAAAACCATAGAAGTTGAACGATTAGCTATTGAGTTCTGTTGAAGAGAAGACT 190686 7064 CTGTGATAGCTCGAGTTCACAATAACTCTGATTGACTTCCGTACGAGAAAAGACTAT 190686 7064 CTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTCCGTACGAGAAAAGTTAATTG 7123 190667 CGGTTATGCTCGAAAAATTTCAGTCCAATAACTCTGATTTGACTCCGTACGAGAAAAATACTGGTAGTGAACTATTGACTCCGTACGAGAAAAATACTTTAACCAAAAATACTCGTACGAGAAAAATACTGGTAAAAATATTTTGAAAAACTATTCAAGAACAAAATTCTAAAAATTTCTAAAAACTTTTCAAAAAATTTCCAAGAAAAAATACTAAGCAAAAAAATTCCAAAAAAAA	190387 AGTATGAAGGATCTGTTACTGAAGAATAAAAGAAGAAGAAGAAGAATCGATTACTGAAGAATGAAG 190446 6824 CAGGTACTGGAATCGGTTCAGCCGGAGCTGGAATTCTTTGCAGCCGGAGTATCTTGAAGTGG 6883
01 1 01 1 01 1 10 1 10 1	Qy 7904 AAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAAATCAATGTCA 7957

B & B &

중 음 중

음 성 음

밁

8 8 8 8

Ş

음 성 음

ঠ

유 성 유

12;

Gaps

ū

6399

```
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 13
AC136928/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC136928
AC136928.3
HTG; HTGS_PF
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (20-DEC-2002) Production Sequencing Facility, DOB Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA On Dec 20, 2002 this sequence version replaced gi:25446891. Sequence Quality Assessment:

This entry has been annotated with sequence quality estimates computed by the Phrap assembly program.

All manually edited bases have been reduced to quality zero. Quality levels above 40 are expected to have less than 1 error in 10,000 bp.

Base-by-base quality values are not generally visible from the GenBank flat file format but are available as part of this entry's ASN.1 file.
                                                                                                                                                                                                                                                                                  Sequence Quality Assessment:

This entry has been annotated with sequence quality estimates computed by the Phrap assembly program.

All manually edited bases have been reduced to quality Quality levels above 40 are expected to have less than 1 error in 10,000 bp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (12-NOV-2002) Production Sequencing Facility, Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 3 (Dases 1 to 144745)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 144745)
DOE Joint Genome Institute.
Sequencing of Human Chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleo
Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 (bases 1 to 144745)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                      Base-by-base quality values are not generally visible from the GenBank flat file format but are available as part of this entry's ASN.1 file.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    iominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                iomo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC136928
                      NOTE: This is a 'working draft' sequence. It currently consists of 1 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that he provided by the submittor.

This sequence will be replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAATAGTAGAAGAATCAGCTACTGAAGAAATAATACGGGATGAA 192812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGAGGAAAAGGAATCAGTAACTGAAGAATTAGTAGATGAAGGATCAGTAACTGAAGAAT 192705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTTGATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTA 9070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCAAGCAGGATCAACTTCTGAAGAAATAGTAGAAGAAGAAGGATCAGTTACTAAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGTAGATGAAGGATCAGTTACTGAAGAAGTTGTAGAACAAGGGGGGTTCAATTGCTCAAG 192765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGTA---GAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAA 9010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5928.3 GI:27311260
HTGS_PHASE2; HTGS_DRAFT; HTGS_FULLTOP; HTGS_ACTIVEFIN
    finished sequence as soon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                144745 bp
ne 16 clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTC-820F23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
       8
       ť
                                                                             estimates that have
       <u>,</u>
       available and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WORKING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HTG 20-DEC-2002
G DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Euteleostomi;
                                                                                                                                                                                                                                                                                                                                           zero.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOE Joint
94598, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   192645
                                                                                                                  Ś
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                           ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                        밁
                                                                                                                                                                       밁
                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 859;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                  125119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   125479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        125359
                             7177
                                                                                                                                                                                                                                                                                                                                                                                                                 6937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
GGAGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTGGAACAGCTGTAGAAGAT 7236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the accession number will be preserved.
1 144745: contig of 144745 bp
Location Qualifiers
                                                                          GGAGTAGCAGCAGCAGCTTGCAGCAGCTATGGCAGGAGGAGTAGCAGCATCAGCAGTT 124889
                                                                                                                                                                       GCAGTAGCTGTGGCAGGAGGAGCAGCATCAGCAG-----TTGCAGTAGCTGTGGCA 124949
                                                                                                                                                                                                                                                                   ---GGAGGAGTAGCAGCTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTT 125003
                                                                                                                                                                                                                                                                                                                                                                  GTAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCTTGCAGTAGCTGTGGCA 125060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATAAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCT 6876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAGTGAAAAATTCTAAAAATTATGACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAGGAGCTGGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAGCAAAACGTTATAG---TICTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTAGCTGTGGCAGGAGTAGCAGCAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATATTATAAAAAGAAATACCAAGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ĠĠĀĠŦĀĠĊĀĠĊĀĠĊĀĠĊĀĠŦŦĠĊĀĠŦĀĠĊŦĠĠĊĀĠĠĀĠŦĀĠĊĀĠĊĀĠĊĀĠĊĀĠŦŦĠĊĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAGTAGTAGGTTCTGTTGGTGTTGGTGGAAATGTAGGAGTAGGAGCTTCTTCTGATACC
                                                                                                                       GTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATC 7176
                                                                                                                                                                                                                   AATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAGAAAAA
                                                                                                                                                                                                                                                                                                                GCCGGTGGAGGAGCCGCAGGTTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATA 7056
                                                                                                                                                                                                                                                                                                                                                                                                              TTACACTCTTCTACTGATGTAAATGTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACA 6996
                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTTGCAGTAGCTGTGGCAGGAGTAGCAGCATCAGTAGTTGCAGTAGGTGTGGCAGGAGGA 125120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAGTGGTTTCTGTCAATAATATTGCAAATAAGGTAGAAACAGATATCGATCATAGTACT 6936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAGGAGTAGCAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCA 125180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGCAGTTGCAGTAGCTGTGGCA 125240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTGTGGCAGGAGGAGTAGCAGCAGCAGTAGCTGTGGCAGGAGGAGGAGCAGCAGCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGCATCAGTAGTTGCAGTAGCTGTGGCAGGAGGAGGAGCAGCAGCAGTTGCCGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCGTAGCTGTGGCAGGAGGATTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGTA 125420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGGAAAGACGGAAGTAGATGTGGAAGAAGCAAAGATTTTTOGTAAAAAAAGCTGAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAGTAGCAGCAGCTGTTGCAGTAGCTGTGGCAGGAGGAGCAGCAGCAGCAGCAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAGTCGCAGCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGTTGCAGTAGCTGTGGCA 125540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCGGAGAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /mol_type="genomic DNA"
/db_xref="taxon:9606"
/chromosome="16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .144745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       clone="CTC-820F23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 120.4; DI
Pred. No. 4e-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches 1161; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 144745;
```

6756

125360 6696 125480

6579

6639

6519

6459 125660

```
124588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  124888 GCAGCAGCAGCAGCAGCAGCAGCAGCAGCATCAGCAGTAGCAGCAGCAGTAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       124348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           124408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            124468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 124528
123808 GCAGTAGCTGTGGTAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              124228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124288
                                                                                                                                                                                                                                                                  123928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAA 7296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAGGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAGCAGTTGCAGTAGGTGTGGCAGGAGGAGGAGTAGCAGTTGCAGTAGCCGTGGCAGGA 124169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGCATCAGTAGTTGCAGTAGCTGTGGCAGGAAGAGTAGCAGCAGCAGCAGTTGCAGTA 124289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTAGCAGCAGTAGCAGTAGCTGTGGCAGGAGGAGGAGCAGCATCAGCAGTTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAACAGCATATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGTAGCTGTGGCAGGAGTAGCAGCAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGTAGCAGCAGCAGCTTGCAGCAGCTGTGGCAGGAGCAGTAGCAGCAGCAGCAGTT 124529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGGAACAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAGCAGCAGCTGTGGCAGGAGGAGTAGCAGCAGCAGCAGCTGCAGCAGCTGTGGCAGGA 124589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTGTGAAGACTTCTGATATTATTGGAAAAATGTAGATATTACAACAGAGGACAAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAGGAGTAGCAGCATCAGCAGCAGCAGTAGCTGGCAGGAGCAGTAGCAGCAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCC 7416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGCAGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGCAGCAGCAGCAGCTGTGGCA 124709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAACAAGATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGGTATTTCT 7356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTGTGGCAGGAGTAGCAGCAGCAGCAGTTGCAGTAGCTGTGGCAGGAGTAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ANAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAGTAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGCAGCAGTTGCAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGAAATCAATGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCATTATCTCAAAAGCAAAGAATGAAATGAATTCAGAGGTTGAAATTGAGAAGAGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGTAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGA 7836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGATGTTATTGTAAAA 7776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                   GCAGGAGGAGTAGCAGCATCAGCAGTTGCAGCAGCTGTGGCAGGAGGAGTAGCAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAAGCAACACATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGGCAGTTGCAGCAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGCACCTGTG
                                                                                                                                                                                        ATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTC
                                                              TTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTA
                                                                                                                                 GGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGGGAGGAGGAGCAGCAGCAGCAGTT
                                                                                                                                                                                                                                                                     GCAGTTGCÁGCAGCTGTGGCAGGÁGGÁGTÁGCÁGCATCAGCÁGTTGCÁGTÁGCTGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   124409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    124769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    124469
                                                                     8316
                                                                                                                                                                                                      8256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               124349
                                                                                                                                                                                                                                                                         123869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              123989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            124049
                                                                                                                                        123809
                                                                                                                                                                                                                                                                                                                                                                                                          123929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                124109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7896
```

8 8 8 8 8 8 8 8 8 8 8 8 8 8

음 성 음

S

음성 음성 음성 음

```
RESULT 14
AC138477/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FOCUS
ORIGIN
                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                          gap
                                                                                     gap
                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           38662 bp DNA linear HTG 08-JAN-2003
Homo sapiens chromosome 16 clone LA16c-302C9, WORKING DRAFT
SEQUENCE, 3 unordered pieces.
AC138477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Consensus quality: 36949 bases at least Q40
Consensus quality: 37074 bases at least Q30
Consensus quality: 37285 bases at least Q20
Consensus quality: 37285 bases at least Q20
Estimated insert size: 40000; agarose-fp estimation
Estimated insert size: 38462; sum-of-contigs estimation
Quality coverage: 9.88 in Q20 bases; agarose-fp estimation
Quality coverage: 9.88 in Q20 bases; agarose-fp estimation.
* NOTE: This is a 'working draft' sequence. It currently
* consists of 3 contigs. The true order of the pieces
* is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center: Joint Genome Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (08-JAN-2003) Production Sequencing Facility, DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 (bases 1 to 38662)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequencing of Human Chromosome Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 (bases 1 to 38662)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC138477.1 GI:27544978
HTG; HTGS_PHASE1; HTGS_DRAFT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center clone name: LANL-16c_302C9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Web site: http://www.jgi.doe.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Center Code: JGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Center Project Name: 1216097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAG 123697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGGAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                               arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                             /estimated_length=unknown 3315. .3414
                                                                                          1108. .1207
                                                                                                         /clone="LA16c-302C9"
/clone_lib="Los Alamos human chromosome 16
librarles; LA16NCO1 and LA16NCO2"
                                                                                                                                                                                                   /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                             1. .38662
                                                                                                                                                                                                                                                                                         ocation/Qualifiers
                   /estimated_length=unknown
                                                                                                                                                                              chromosome="16"
                                                                                                                                                                                                                                                                                                            1107: contig of 1107 bp in 1
1207: gap of unknown length
3314: contig of 2107 bp in 1
3414: gap of unknown length
38662: contig of 35248 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HTGS_ACTIVEFIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16
                                                                                                                                                                                                                                                                                                                                                                                      bp in length
length
                                                                                                                                                                                                                                                                                                                                                                      bp in length
                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                            cosmid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8368
```

ेश्र	ß 3	유 성	유 성	g &	B 8	B 성	B &	8 8	B 8	8 8	8 8	B 8	8 Q	B &	g &	8 8	ß 8	Quer Best Mato
GCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGGAGGAGCAGCA	7069 ATAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATGTAACG 7128	7009 GCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTG 7068	6949 ACTGATGTAAAAGGTCTTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGA 7008	6889 GTCAATAATATTGCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTTACACTCTTCT 6948	6829 ACTOGAATCOGTTCAGCCOGAGCTOGAATTCTTGCAGCCCGAGTATCTTGGAGTTGGTTTCT 6888	6769 TCTAAAATTATGACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAATCAGGT 6828	6709 ATTGGAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGAAAAAT 6768	6649 CGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGA 6708 30485 GTAGCAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGGAGCATCAGCAGCTTGCA 30426	6589 ACGGAAGTAGATGTGGAAGAAGCAAAGATTTTGGTAAAAAAAA	6529 GCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGAAAG 6588	6469 GAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTTGGAGTCGGAGTCGCA 6528	6409 AAAAGAATACCAAGACTAGGAAAAACTACAATGTCTGATGAAGGTTTCGGAGAA 6468	6349 GGTTCTGTTGGTGTTGGAAAATGTAGGAGTTAGGAGCTTCTTCTGATACCAATATTATA 6408	6289 TTANATGCAANACATTATTCTGTAANATCAGGAGATTACACGAATTCAATCGGAGTAGTA 6348 30839 GCTGTGGCAGGAGGAGTAGCAGCAGCAGCAGCAGCTGCCGTAGCTGGCAGGAGGAGGAGTAGCA 30780	6229 GGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAAATTCTATA 6288	6169 ACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCA 6228	6109 GACTTATCACAAAAAAGAAAAAATAAGTAATAAAAAAAGGATTTGTTACCAATAGTTCAGCT 6168	Query Match 1.2%; Score 120.2; DB 14; Length 38662; Best Local Similarity 41.0%; Pred. No. 6.9e-07; Matches 1172; Conservative 0; Mismatches 1658; Indels 27; Gaps 3;
Ś	B &	B &) 등 5	8 8 8	B 성	B 5	\$ \$ S	당 등 5	? # \$	}	}	\$ B &	}	, B &	B 4	?	5 B 1	\$ \$
8209 GCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAGGAAGGA	8149 GCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAA 8208	8089 AGAGTATTTTTCATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACA 8148 	23	3 8 9	43	: C :	5 5 6	23	3 8 9	5 4 6	7549 ALIMANASHANIICUGGAGIIACIGIIGAAAANIICIIIIGIGAAAGUACIIGAAAAAAAIICIGAAAAGUACIIGAAAAAAAIIA 1	63 8	7429 ICIGATATTATIGAAAAAATGIRGATATTACAAGAGGACAAGAATAATATCACTTCT 7488	7369 TCTGTAAAAGCGAFAGAGGAFATTAAAGCCATTGTGAAGACT 7428	ι & ς		29963 GGAGTAGCAGCAGTTGCAGTAGCTGGCAGGAGGAGGAGGTAGCAGTAGCAGTAGCAGTAGCTGTG 29904	

В

밁 S 밁 δ В S

zero.

zero

```
RESULT 15
AC138510/c
                                                                                  JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28826
                                                                                                                                                                                                                                                                                                                                                        AC138510
AC138510.2 GI:28008372
HTG; HTGS_PHASE2; HTGS_DRAFT; HTGS_FULLTOP; HTGS_ACTIVEFIN.
Homo sapiens (human)
Direct Submission
Submitted (08-JAN-2003) Production Sequencing Facility, DOE Joint
Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, US.
                                                                                                                                                                                                  Hominidae; Homo.

1 (bases 1 to 36348)

DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
                                                                                                                                                                                                                                                                                                                                            Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AC138510 36348 bp DNA li
Homo sapiens chromosome 16 clone LA16c-448D5,
                                                                                  2 (bases 1 to 36348)
DOE Joint Genome Institute.
                                                                                                                                                                  Sequencing of Human Chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                          Unpublishec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGGCAGGAGGAGCAGCAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGTAGCAGCATCAGTAGTTGCAGTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ANAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTAGCAGCAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTGCAGTAGCTGTGGCAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGA 28647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGGAGCAGCATCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CANAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTGTAGTATCAGGAAATGGAGGAGTAATTGCCGGAGCAGGAGTGAATACTTCTACAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCT 8328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGCAGTTGCAG---TAGCTGTGGTAGGAGTAGCAGCATCAGTAGTTGCAGTAGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCTGTGGCAGGAGTAGCAGCATCGGCAGTTGCAGCAGCTGTGGCAGGAGGAGTAGCAGCA 28227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGA 8928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAAT 8868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGTTGCAATAGCTGTGGCAGGAGGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCGGCAGTTGCAGCAGCTGTGGCAGGAGGAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGA 8808
                                                                                                                                                                                                                                                                                                                                            sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WORKING DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HTG 29-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28407
                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                     S
                                                                                                                                                밁
                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 942;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    y Match 1.2%;
Local Similarity 41.6%;
                                                                                                                                                                                                                                                                                                                                                                             17107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence Quality Assessment:
This entry has been annotated with sequence quality
estimates computed by the Phrap assembly program.
All manually edited bases have been reduced to quality
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence Quality Assessment:
This entry has been annotated with sequence quality
estimates computed by the Phrap assembly program.
All manually edited bases have been reduced to quality
Quality levels above 40 are expected to have less than
1 error in 10,000 bp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (29-JAN-2003) Production Sequencing Facility, DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA On Jan 29, 2003 this sequence version replaced gi:27545011.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 (bases 1 to 36348)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Base-by-base quality values are not generally visible from the GenBank flat file format but are available as part of this entry's ASN.1 file.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 error in 10,000 bp. Base-by-base quality values are not generally visible from the GenBank flat file format but are available as part of this entry's ASN.1 file.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Quality levels above 40 are expected to have less than
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NOTE: This is a 'working draft' sequence. It currently consists of 1 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submittor.

This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

1 36348: contig of 36348 bp in length.
                                      GTAGCTGTGGCAGGAGTAGCAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCA 1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTCATACTTTAAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAGGATTTGTTACCAATAGTTCAGCT
                                                                                        AAAAGAAATACCAAGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGTTTCGGAGAA 6468
                                                                                                                                                                                                                                                                GCTGTGGCAGGAGGAGCAGCAGCAGCAGTTGCCGTAGCTGTGGCAGGAGGAGTAGCA
                                                                                                                                                                                                                                                                                                                     TTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTAGTA 6348
                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCTATA 6288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGCGGCAGTAATAGTAGTAGTAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTA 17108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGTTAATGACAAAGATACGGAGAAGTAGTAATAACAATAGTTACATGAGCAGTGCAGTA 1716
                                                                                                                                                   GCAGCAGCAGTTGCCGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGC-----AGTTGCA
                                                                                                                                                                                                  GGTTCTGTTGGTGGTGGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATATTATA
                                                                                                                                                                                                                                                                                                                                                                             GCÁGCAGCAGCAGTTGCCGTAGCTGTGGCÁGGÁGGÁGTÁGCAGCAGCAGCAGTTGCCGTÁ 17048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
/chromosome="16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="LA16c-448D5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . .36348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 119.8; DB 14;
Pred. No. 8e-07;
0; Mismatches 1297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
```

36348; 24;

Gaps

6168 2

6228

6408

16986

1693

δ 밁 8 밁 S 岛 5 밁 Ś 밁 5 밁 Ş 밁 ঠ

S 밁

밁

S

S

음 성 음

8 8 8 8

```
16051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTG
                                                                                                                                                                                                                    GCTGTGGCAGGAGTAGCAGCATCGGCAGTTGCAGCAGCTGTGGCAGGAGTAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                    GCAGCATCGGCAGTTGCAGCAGCTATGGCAGGAGGAGTAGCAGCATCGGCAGTTGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAGTAAATGATGCTACGAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTAGCAGCAGTTGCAGTAGCTGT----------GGCAGGAGGAGGAGTAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGGATTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGTAGCAGCATCAGTAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTAAAATTATGACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAATCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTAGCTGTGGCAGGAGGAGTAGCAGCAGTTGCAGTAGCTGTGGCAGGAGTAGCAGCAGCA 1657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAGTTGCAGTAGCTGTGGCAGGAGTAGCAGCAGCAGTTGCAGTAGCTGTGGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGGAGGAGTAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAGTAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGGAGTAGCAGTTGCAGTAGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCGGAGCCAATGTCTTGGTAAATAATTTTGGAACAGCTGTAGAAGATAGAAAAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAGTTGCAGTAGCTGTGGCAGGAGTAGCAGCATCAGTAGTTGCAGTAGGTGTGGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGGAAGGAGCAGCA 7188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         АТАССТССЯСТТСАСААТААСТСТСАТТТСАСТТСССТАССЯСАЛАЛАЛСТАЛАТСТЛАСС
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACTOGAATCOGTTCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTGGAGCAGCAGTTACCAAAAGATGAATCAAACACGAGAGCAAGAGTGAAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTAGCAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGGAGTAGCAGCATCAGCAGTTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGGCAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGTAGCAGCAGCA 1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCT
ATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTA
                                                                                                                                        acregregritegeaacrecaegretrectrececarcaegaacaeregeagritacaaat
                                                                                                                                                                                                                                                                                            TCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGGACAAGAATAATATCACTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTGATGTAAATGTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGCAGTTGCCGTAGCTGTGGCAGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCAATAATATTGCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGCAGCAGTTGCCGTAGCTGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGGAAGTAGATGTGGAAGAAGCAAAGATTTTGGTAAAAAAAGCTGAGATTACAGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCA
                                                                        TCGGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGCAGCAGTTGCAGTAGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1681
```

8 8 8 8 8 8 8 8

8 8 8 8 8 8 8 8

음 성 음

```
Ş
                                                               밁
                                                                                        Ş
                                                                                                                          멍
                                                                                                                                                           Ş
                                                                                                                                                                                                   ద
                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                   중 유
                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ď,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15811
                                                                                                                                                                                                      15211
                                                                                                                                                                                                                                                                           15271
                                                                                                                                                                                                                                                                                                                                              15331
                                                                                                                                                                                                                                                                                                                                                                                                                   15391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15751
15031
                                                                                                 8269
                                                                                                                                                                                                                                       8149
                                                                                                                                                                                                                                                                                                                                                                                                                                                     7969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGGAGGAGTAGCAGTAGCAGTAGCTGTGGCAGGAGGAGGAGCAGCATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCA
GCAGTAGCTGTGGCAGGAGTAGCAGCATCGGCAGTTGCAGCAG
                              TCTGTAGTATCAGGAAATGGAGGAGGAATTGCCCGGAGCAGGAG
                                                                 GGAGTAGCAGCAGCAGCTTGCAGTAGCTGTGGCAGGAGGAGCAGCAGCAGCAGCAGCTT
                                                                                               CGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCT
                                                                                                                                   GCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGTTGCAGTAGCTGTGGCAGGA
                                                                                                                                                                                                     GCAGTAGCTGTGGCAGGAGTAGCAGCAGCAGCAGTTGCAGTAGGTGTGGCAGGAGGAGTA
                                                                                                                                                                                                                                       GCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAA
                                                                                                                                                                                                                                                                                                                                              GTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGTAGTTGCAGTAGCTGTGGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                   GGAGGAGTAGCAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGGAGCAGCATCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGCTGTAGCAGGAGTAGCAGCAGCAGCAGCAGTAGCAGGAGGAGTAGCAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAGCAAAGAATGAAATTCAGAGGTTGAAATTGAGAAGAGTATTTTCAATGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTAGCAGCAGCAGTTGCAGTAGCTGTAGCAGGAGGAGTAGCAGCAGCAGCAGTAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTAAAAATTCTAAGCTATTAGGAAAAAATATTGATGTTATTGTAAAAGATAAATCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCATTOGGAATAGGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGT 7728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATGTTAGATCGGATATTACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGA 7668
                                                                                                                                                                    AGAGTAGCAGCAGCAGCTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTT
                                                                                                                                                                                                                                                                                                            AGAAGTATTTTTCATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACA 8148
                                                                                                                                                                                                                                                                                                                                                                                ATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGCAGCAGTTGCAGTAGCTGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCA 7848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTTGCAGTAGCTGTAGCAGGAGTAGCAGCAGCAGCAGCAGTTGCAGTAGCTGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAGGAGCAGCAGCATCAGTAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGCAGCA
                              8371
14989
                                                                                                                                                                                                                                                                                                                                                                                8088
                                                                                                   8328
                                                                                                                                                                                                                                                                                                                                              15272
                                                                                                                                                                                                                                                                                                                                                                                                                   15332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7908
                                                                                                                                                                                                                                                                           15212
                                                                                                                                                                                                                                                                                                                                                                                                                                                     8028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15692
```

```
PRA929351/c

PFA929351/c

PFA929351/c

PFA929351/c

PFA929351/c

PFA929351/c

PFA929351 ALB44504

VERSION

AL929351.1 GI:23504490

KEYWORDS

SOURCE

ORGANISM

Plasmodium falciparum 3D7

Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.

REFERENCE

AUTHORS

Mungall, K., Bowman, S., Akkin, R., Baker, S., Barron, A., Brooks, K.,

Buckee, C.O., Burrows, C., Cherevach, I., Chillingworth, C.,

Cronin, A., Davies, R., Davis, P., Deate, Deateden, F., Doggett, J.,

Feltwell, T., Goble, A., Goodhead, I., Gwilliam, R., Hamilin, N.,
```

8 8 8 8 8 8 8 8 8

```
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hance, Z., Harper, D., Hauser, H., Hornsby, T., Holroyd, S.,
Hdorrocks, P., Humphray, S., Jagels, K., James, K.D., Johnson, D.,
Kerhornou, A., Knights, A., Konfortov, B., Kyes, S., Larke, N.,
Lawson, D., Lennard, N., Line, A., Maddison, M., McLean, J., Mooney, P.,
Moule, S., Murphy, L., Oliver, K., Ormond, D., Price, C., Quail, M.A.,
Rabbinowitsch, E., Rajandream, M.A., Rutter, S., Rutherford, K.M.,
Sanders, M., Simmonds, M., Seeger, K., Sharp, S., Smith, R., Squares, R.,
Squares, S., Stevens, K., Taylor, K., Tivey, A., Unwin, L.,
Whitehead, S., Woodward, J., Sulston, J.E., Craig, A., Newbold, C. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence of Plasmodium falciparum chromosomes 1, 3-9 and 13 Nature 419 (6906), 527-531 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              For
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The Welcome Trust Sanger Institute, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 1SA, UK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (20-SEP-2002) P.falciparum Genome Sequencing Consortium,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Barrell, B.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Devlin,K., Baker,S., Davies,P., Mungal,K., Berriman,M., Pain,A.,
Hall,N., Bowman,S., Churcher,C., Quail,M. and Barrell,B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         more information about this sequence or the Malaria Project, http://www.sanger.ac.uk/Projects/P_falciparum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bases 1 to 347050)
                                                                                                       FVKWIENKKLEEEKKOCKEYTEEEKKOLTINGTITETQVGTINNYKDDEYQQLQGGY
GDVNAFLELLMKETTCKDHPKVEEKKOLD DENEGTEKTESHTEYCETCPWCATKKKGID
GNWEEQKYEEGCENYLMKPIDESKSTDLDILLWKDTSGTTIWEKLGGLCNDSSKRITVQM
GNWEEQKYEEGCENYLMKPIDESKSTDLDILLWKDTSGTTIWEKLGGLCNDSSKRITVQM
ENWQCHYEKKSQYEEDGEDKDYCYLKDDKKKKPEHRTIKSYYTLFPWINEMLKDSIDW
SKELKTCINNEKPTNCIRECKGKCDCFKKWVVQKEQEWKGLEEHYEKEBYSGDFGBRI
SPYVTLEGULQYSYLEMIRKYYAQEKPVQCBIQDIEKKNNFEVKEDDNSITKFLQQE
KGIATKCIEKQBECKQOKKQQRQKQPADKVVSRSGASDDTASTEKEEEEEEE
EEEDLGEESEEPEDQAVVDQDGQETTEKKYNACHTERGSEKTTTPEKSYUVCKTVAE
EEEDLGEESEEPEDQAVVDQDGQGETTEKKYNATTERGSEKTTTPEKSYUVCKTVAE
EENDLOEESEEPEDQAVVDQDGQGETTEKKYNATTERGSESTGSDATTGGSICVP
RRRRLYVTLETUTAMASGGTTQVETQASGATTETGCOSGETTPQGGTTSESEADGASQDF
SEKLATAFIESAAVETFFLUDBYKKENTKRGSVLFLLEEPINGDTISGBEKDEKLLKVG
KIPDDFLRLMFYTLGDYRDILFESSNTTGSTTGKETPSSSNDNLKNIVIEAGGTDEKDK
QKMKEIQQKIDKILKQSGTTPPTVTHSPSSGTTTPSSSNDNLKNIVIEAGGTDEKDK
QKMKEIQGKIDKILKQSGTTPSTTHSPSSGTTTSSSWERNAKHIWKGHVCALTYKD
NTNGGPPTQDNDLKKALMDDKTNEPKKSEYKYDQVELKEBNSGTGVTKGHAEAPGDNT
NTNGGPPTQDNDLKKALMDDKTNEPKKSEYKYDQVELKEBNSGTGVTKGHAEAPGDNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="Interpro:IPR004258"
/db_xref="UnitProt/TEMBL:Q81495"
/db_xref="UnitProt/TEMBL:Q81495"
/cf_anslation="MgP9GITGTQGETAKHMEDRIGKQVYETVKNEAENYISELEGKL
/cf_anslation="MgP9GITGTQGETAKHMEDRIGKQVYETVKNEAENYISELEGKL
SQATLLGERVSSLKTCQLVEDVRSKANGDVKRYPCANRSPVRSDESRSQCTYNRIKD
NETDDNACGACAPYRRLHLCDYNLEKMGKTSTTKHDLLAEVCMAAKYEGDSIKTHYTI
HKHTNNDSAAELCTELARSFADIGDIIGKGUNIKKQNGKKTEREKLEENLKRI
PGKIHEDVTNGKKEVLKTRYKDINDPEFFKLREDWWTANATVWKAITCHAGESDYC
RITKHKLKNAKEQCREKYKSGTDRYCSRNGYDCTQTIIGRNILVSDSECTNCSVVCTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Similar to Plasmodium falciparum variant-specific surface protein var-2 TR.Q26033 (EMBL:L40609) (2664 aa)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Plasmodium falciparum 3D7"
/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="erythrocyte membrane protein 1 (PfEMP1)"
/protein_id="CAD51367.1"
/db_xref="GI:23504491"
PLSKFVLRPPYFRYLEEWGETFCRERTRRLGKIKGECKVDDSGSGRGGVIKRQYSGDG
EDCDKVHEDPTTLPDLGSSCPKSCSSYRKWIKIKKDEYEKQQKAYEQQKKNCEKESEG
VENKSDICDQKFLQNLKNYGSIDSFLDRLKKGPCSKTYNESGEDNNKIFEDTEKTFGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 db_xref="GOA:Q81495"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fasta scores: E(): 2.1e-94, 38.066% id in 2782 aam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           join(20929. .26310,27215. .28456)
/gene="VAR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              join(20929. .26310,27215. .28456)
/gene="VAR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="rep20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="taxon:36329"
/chromosome="5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /mol_type="genomic DNA"
/isolate="3D7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note="synonym: PFE0005w"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'note="Telomere"
```

```
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KFEGHGLEDCNGAGI FKGI KENKWKCDKVCGYVVCKPKNGNGKNEGTYI I QIRALVRR
WVEY PLEDYNKI RKKLKPCI NDGKEPKCI KTCOKKCNCAKWI KLKQDEWENI KNREN
EQYKNGNEGDY PVKTI LEELI SRIAAATDKAERGSL DKLKTISLGCNCSDNSQKKNTDE
RDI VECLLEKLQVKATSCGGOGOSTOFED DKLKTISLGCNCSDNSQKKNTDE
RDI VECLLEKLQVKATSCGGOGOSTOFED DEEDLLLEEENERQVENQKVG
NKAPAFCPPPEK PKEEPDE KCGDKEEEKGGEEEKDKGNEEGGGAPSSPSEGTKEL
PPPER PEEAKPPEVKTT DELRVINI PKSDAPAPPAAPQPTLPADEPNRDI LATTI PFGI AFA
LGSI AFLFLKKKTKSTI DLLRVINI PKSDYDI PTKLSPNRYI PYTSGKYRGKRYIY YLB
GDSGTDSGYTDHYSDI TSSSESSYEEMDINDI TVPGS PKYKTLI EVVLBESGNNTTAS
GNNTTASDTQNDI QNDGI PSNKFSDNEWNTLKDDF 1SQYLGSDPNLDDI KNGANVT
LNTEPNILY FFOKPETKFFITS I HDRNLY YTGERSYN I NMSTNSMDD I PINDLBLFHK
WLDRHRDMCBQWENHHERLAKLKEEWELFGTNHVKQTS I HSVAKVTNSDPI HNQLELFHK
WLDRHRDMCBQWENHHERLAKLKEEWELFTNHVKQTS HSVAKVTNSDPI HNQLELFHK
WLDRHRDMCBQWENHHERLAKLKEEWELFTNHVKQTS HSVAKVTNSDPI HNQLELFHK
WLDRHRDMCBQWENHHERLAKLKEEWELFTNHVKQTS HSVAKVTNDNNMEKPSKVKI ELDV
NYKKETNMDTI LEDLLKKNBPYYDVQDDI YYDVNDHDTSTVNPNNMEKPSKVKI ELDV
                                                                                                                                                                                                                                                                   /codon_start=1
complement(29923. .3096
/gene="RIF, degenerate"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="PFE0010c"
                                                                                                                                   /note="synonym: PFE0025c"
complement(join(36464. .37324,37496. .37576))
/gene="RIF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TR:096112 (EMBL:AE001367) (370 aa) fasta scores: E(): 3.3e-62, 53.125% id in 384 aa 1 probable transmembrane helix predicted for by TMHMM2.0 at aa 332-354"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement (join (33056. .34126,34325. .34378))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(30904. .30909)
/gene="RIF, degenerate"
/note="Possible splice donor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="RIF, degenerate"
/note="Similar to Plasmodium falciparum rifin pfb1040W
TR:096293 (EMBL:AE001433) (345 aa) fasta scores: E():
1.1e-50, 53.161% id in 348 aa. Contains nonsense mutations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NKKTIKEKYPISDVWDI"
                                                                                                                                                                                                                     complement (join (36464. .37324,37496. /gene="RIF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement (29233. .29304)
/gene="PFE0010c"
                                                    8.3e-52, 54.574% id in 317 aa
                                                                                 TR:096288 (EMBL:AE001432)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement (join (33056. .34126, 34325. .34378))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        at apparent start position
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pseudo,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         note="synonym: PFE0020c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'gene="RIF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement (29923. .30963)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="Similar to Plasmodium falciparum rifin pfb0030C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note="synonym: PFE0015c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note="synonym:
                                                                                                               note="Similar to Plasmodium falciparum rifin pfb1005W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   product="RIFIN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        note="VAR fragment"
probable transmembrane helices predicted for by TMHMM2.0
aa 122-144 and 271-293"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pseudo-VAR fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .30963)
                                                                                 (316 aa)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for exon 2"
                                                                                    fasta scores: E():
                                                                                                                                                                                                                                                        .37576))
```

gene

CDS

gene

CDS

gene

Sas

gene

Sg

```
밁
                                                                       ঠ
                                                                                                                밁
                                                                                                                                              ş
                                                                                                                                                                                      밁
                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                               ક
                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                            ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 803; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SgS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                     45381
                                                                                                                AAAGAAGAAATTGAAAAACAAGTAGAAGAAGGAATTAAAGAAAATGATACTGAAAGTAAA
                                                                                                                                                                                                                                                                                                                                 CAAGAAGAAAAAGGAAATAAAGAAAATATTCTTGAAATTAAAGATATAGTAATTGGACAA
     TCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCT
                                       GATAAAGTGATAGGACAAGAAGTGATAAAAGGAGGTGTTAATGAAGAAGGTCCCGAAAAAC 45082
                                                                             GAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCA
                                                                                                                                                  GGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAATGTAGATATTACAACA
                                                                                                                                                                                      GAĀAATCATACTGAĀAGTAĀAGATAAAGTGĀTĀGGACĀAGAĀATĀATAGTTGĀĀGAĀGTĀ
                                                                                                                                                                                                                        GCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAA
                                                                                                                                                                                                                                                            GAAGTAATAGAAGAAGTAAAAAAAGTAATTAAAAAAAAGTAGAAAAAGGAATTAAA
                                                                                                                                                                                                                                                                                             GAAGTTAACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAAAATCTTACAATCA
                                                                                                                                                                                                                                                                                                                                                                   GCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGAC
                                                                                                                                                                                                                                                                                                                                                                                                         AATGCAGGAATCGGAGGAGCAGCAATCGCGAATGTCTTGGTAAATAATTTTTGGAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGACAAGAAATAATAACTGAAGAAGTAAAAGAAGGAATTAAAGAAAATGATACTGAAAAT 45442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="InterPro:IPR002858"
/db_xref="UniPro('TreMBL',081493"
/db_xref="UniPro('TreMBL',081493"
/dranslation="MAINMKLHCSKILLFSLQLNILITSSYVNNKNKPYITPHTSAIT
/srvlnscolymmyyDkdadmks/vranfdrossrrferyzerritrnokykreocekdio
KIILDKIEKLLESKVEKCCLICGCGLGGGVAPPFVGLFGLAVNEMKKAVVAATDVG
IKBAIKEVGSIFYLADGSYMEMTKMINAGNYSOKMSLVSIVTILKNKCSEDEALAGPL
FCKASBAATESGEVFEFSGNISRMAANAABAAGNAANKYAEMTSVGTICSNPVVISA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement (join (43327. .47481,47612. /gene="MESA" /note="synonym: PFE0040c" complement (join (43327. .47481,47612. /gene="MESA" /gene="MESA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement (41129. .41403)
/gene="RIF, degenerate"
/note="synonym: PFE0035c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Similar to Plasmodium falciparum mature
parasite-infected erythrocyte surface antigen TR:Q06166
(EMBL:AF056936) (1661 aa) fasta scores: E(): 3.6e-144,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement (41129...41403)
/gene="RIF, degenerate"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement (39443...40488)
/gene="STEVOR, degenerate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement (39443. .40488)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /pseudo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /pseudo
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="synonym: PFE0030c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IVVVIIAVILLIIYLILRYRRKKKMKQKQQYTKLLNQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
/product="RIFIN"
/protein_id="CAD51371.1"
/protein="GI:23504493"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'note="RIF fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="Apparent single frameshift
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pseudo/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene="STEVOR, degenerate"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 119.4; DB 2;
Pred. No. 3.9e-07;
0; Mismatches 1096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         degenerate"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 347050;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        in exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .47761))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .47761))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7164
                                                                                                                45142
                                                                                                                                                                                                                                                                                                                                 45322
                                                                                                                                                                                                                                                                                                                                                                                                         45382
                                                                                                                                                                                                                                                            45262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
                    ફ
                                                        밁
                                                                                  S
                                                                                                                              F
                                                                                                                                                          श्च
                                                                                                                                                                                          밁
                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                               44124
                                                                                                                                                                                                     44184
                                                                                                                                                                                                                                                                           44244
                                                                                                                                                                                                                                                                                                                                                                                                                        44364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               44424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     44484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          44541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         44661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             45021
                                                                                                                                                                                                                                                                                                                                                  44304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     44781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            44841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         44961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    45081
                                                                                                                                                                                                                                                                                                              8365
                                                                                                                                                                                                                                                                                                                                                                                                                                                          8245
8602 GGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTTGGCTAAAAATGAAAATTATGGAAAT 8661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7585
                                                        GATTGTAAAAAAGAAGAAGAAGTACAAGAAGAAGTCTGAAGAAGAGTCTGAAGAAGAGTCT
                                                                                                                                                                                                                                                                                                                                                  <u>AACGAAAAAGATACCGAAAGCAAAGATAAAATGATAGGAAAAGAAGTAATAATAGAAGAA</u>
                                                                                                                                                                                                                                                                                                                                                                                    GAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAGTTTGCCGGA 8364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAAAAAGAGTAAAAAAAAAAATAATAAAAATGAAAAACAAAGATAATGTGATAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAAT 8601
                                                                                                                               GAAAAAGATACCAAAAACAACGATAAAAAGATAGGAAAAAGAGTCAAAAAACCAATAGAT
                                                                                                                                                                 GCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGTGCAT
                                                                                                                                                                                                     AATAGAAAAATGAAAGAAAGATGTGATAGAACAAGAAATAGTAAGCGAAGAAGTTAAC 4412:
                                                                                                                                                                                                                                       AAGCAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTT
                                                                                                                                                                                                                                                                           GTAAAAGAAGAAGTTAAAAAAAAGAGTAAACAAAGAAGTTAACAAAAGAGTAAACAGAAGA
                                                                                                                                                                                                                                                                                                             G---CAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGA
                                                                                                                                                                                                                                                                                                                                                                                                                        GAAAAAGATACCGAAAGCAAAGATAATGTGATAGTACAAGAAATAATGAACGAAGATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AMAGAGATAGAACAAGAAAAAGAAAAAGAAGAAGTAAAAGAAGTTAAAGAAAAAGATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAAAAGAAGTAAAAGAAAAAGAAGAAGTAAAAGAAAAAGATACCGAAAGCAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTAAAAAAAGAGTAAAAAAAAAAGAATAATAAGAATGAAAGAAAAGATAATGTGATAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAATTCAGAGGTTGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAAT 7704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTGTGAAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8124
                                                        44005
                                                                                                                               44065
                                                                                                                                                                                                                                                                           44185
                                                                                                                                                                                                                                                                                                              8421
                                                                                                                                                                                                                                                                                                                                                                                                                                                           8304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               44365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          44485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8064
                                                                                                                                                                                                                                                                                                                                                                                                                        44305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       44902
                                                                                                                                                                                                                                                                                                                                                  44245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          44782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         44602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7644
```

밁

S 밁 S 밁 S

δ

S

δ 밁

```
JOURNAL
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AF056936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 17
                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                             mRNA
                                                                                                                                                                               Sdo
                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           43944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Exp. Par
10072328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kun, J.F., Waller, K.L. and Coppel, R.L. Plasmodium falciparum: structural and functional domains mature-parasite-infected erythrocyte surface antigen Exp. Parasitol. 91 (3), 258-267 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AF056936 DNA linear INV 10-
Plasmodium falciparum mature parasite-infected erythrocyte
antigen gene, complete cds.
                                                                                                                                                                                                                                                                                                                                                                     Submitted (01-APR-1998) Humanparasitology, Institute for Tropical Medicine, Wilhemstrasse 27, Tubingen 72074, Germany Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Repeat structures in a Plasmodium falciparum protein
binds human erythrocyte protein 4.1
Mol. Biochem. Parasitol. 50 (2), 335-347 (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Plasmodium falciparum
Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium
1 (bases 1 to 5420)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kun,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AF056936.1 GI:3044184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTAAATGAAGATTTCAGAAGAGAATTTCACAATATATTAAGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTAGATCTACAAGGAAAAAGTGGTGGCTATGGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATAATAATGGAGAATTAGAAGAATATTATAAAGAGAAACAGAATGAAGAATATTTTGAT 43705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAA 8901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATGAAGAAAAAATACATCAGGTTTGGTACATAGAAGAAATTGTAAAAAAAGAAAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTC 8841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGAAGAGTCTGAAGAAGAGTCTGAAGAAGAGTCTGAAGAATCTGAAGAAGAATCT 4382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAAATTGGAGATAAATTAGAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGAAGAGTCTGAAGAAGAATCTGAAGAAGAATCTGAAGAAGAGTCTGAAGAAGAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTANAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACA 8721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGAAGAATCTGAAGAAGAGTCTGAAGAAGAATCTGAAGAAGAGTCTGAAGAAGAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GÁAGÁATATATTATTCAATCAÁAAGAÁCATAATACTTTGAATACATTCCCAAATATGGCA 43645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 5420)
1, J.F.J. and Coppel, R.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 5420)
                                                                                                                                                                                                                                                                                                                                                                                                                                             Submission
                                                                                   antigen"
/protein_id="AAC13303.1"
/protein_id="AAC13303.1"
/db_xref="GI:3004185"
/tränslation="MevIcRNLCYDKKNNPMENEGNKYKKVYNNSSLKKYMKFCLCTI
ICVFLLDIYTNCESPTYSYSSIMNNNDRYVRILSETEPPMSLEEIMRTFDEDHLYSIR
                                                                                                                                                                                               antigen"
                                                                                                                                                                                                                                                                                    organism="Plasmodium falciparum"
|mol_type="genomic DNA"
|strain="Palo Alto"
                                                                                                                                                     join(1. .150,281. .5116)
/note="MESA; PfEMP2"
                                                                                                       product="mature parasite-infected
                                                                                                                                 codon_start=1
                                                                                                                                                                                                                      product="mature
                                                                                                                                                                                                                                           oin(<1. .150,281. .>5116)
                                                                                                                                                                                                                                                                                                                                                            .5420
                                                                                                                                                                                                                                                         xref="taxon:5833"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (malaria parasite P. falciparum)
                                                                                                                                                                                                                    parasite-infected
                                                                                                              erythrocyte
                                                                                                                                                                                                                        erythrocyte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                43600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INV 10-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MESA) that
                                                                                                            surface
                                                                                                                                                                                                                           surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                43769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     43945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             43889
```

```
LGENVNDGASENSEDPKKLTEQEKNGTKESSEETEDDKPEENEKKADNKKKSKKKKKS
FFQMLGCNFLCNKNIETDDEEETLVVKDDAKKKHKFLREANTEKNDNEKKDKLLGEGD
                                                                                                                                                                                                                                                                                                                                              TGESKETGESKETGESKETGESKETGESKETGESKETGESKETGESKVTRIYEETKYT
KITSEFRETENVKITESKUREGNKYSGPYENSENSNYTSESEETKKLAEKEENEGEK
                                                                                                                                                                                                                                                                                                                                                                                                 NY I ECLRNAPY I DDPLWGS VYTDKRNNCLQH I KLLEMQESERRRKQQEEENAKD I EE I
RKKEKEYLMKELEEMDESDVEKAFRELQF I KLRDRTRPRKHVNVMGESKETDESKETD
NVVHQILNYEERIRMYEENAARGRLNTVILDPIITFNVIFGDDTMFKFIDS"
                                                                                                                                                                                                                                                                                                                                                                                ESKETGESKETGESKETGESKETGESKETGESKETGESKETGESKETGESKE
```

ş Ś á 밁 Ś 밁 á ð 밁 ð 뭉 á 밁 Ś 맑 Ś 片 문 밁 Matches 1240; Query Match 1.2%; Best Local Similarity 41.9%; 1801 1561 6384 1441 1501 AGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGA ATCAAACACGAGAGCAAGAGTGAAAAATTCTAAAATTATGACTCGAAACAAGTTAGATGT GGCAGATAATAAAAAAAAAAGTAAAAAAAAAAAAAAATCATTTTTTCAAATGTTAGGATG TGGTACAAAGGAAAGTTCTGAAGAAACAGAAGATGATAAACCGGAAGAAAATGAGAAAAA TGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAAC TACTGAAGGTAACGATAAAGTGAAAGGACCAGAAATAATAATT-----AGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGA TGGAAAGAAAGATAAAGTGATAGGATCAGAAAAAACACAAAAGGAAATTAAAGAAAAAGT GGTAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATGCCGC CGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAAGCAAAGATTTT TGAACAGAAAGATAAAGTATTAGGAGAAGGAGATAAAGAAGATGTTAAAGAAAAGAATGA AATTTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGTAGGAGCCGGAGTGGCAGGAAC TACAATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGG AGATGATGCTAAAAAGAAACATAAATTTTTAAGAGAAGCTAATACTGAAAAAAATGATAA TAATTTCCTATGTAATAAAAATATTGAAACTGATGATGAAGAAGAAACGTTGGTAGTAAA TTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGTGTTGGTGGAAATGTAGGAGTAGG Conservative .. Score 118.8; DB 2; Pred. No. 2.2e-06; Mismatches 1672; Indels Length 5420; 48; -GAAGAAGT Gaps 6800 6740 1800 6620 1740 6560 1680 6500 1620 6440 1560 6383 1500 6323 1440 6263 1971 1920 1860 6680

8940 AGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAAT 8999	7881 AATTGAGAAGAGTATTTTCAATGAAGAAATAGAGTAACTAGCCCTTCTAAAGGAATTGG
	Y 7821 AGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAT
	Y 7761 TGATGTTATAGTAAAAGATAAATCGGAATTGAGAGCGAAGCGAAGAAGGATTAACCGTAGG 7820 Db
	AAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATAT 7760
AATTGGAGATAAATTAGAAACGATTGCAAGAGA	Y 7641 TTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATT 7700 VY
8649 AARTTATGGAAATGTAAAAGGAACTGGAGGAGCTTAGTCGGAGCGGAAACAGCAGCGT 8708	Y 7581 TTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGC 7640 Ph.
	Y 7521 CGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAA 7580
	Y 7461 AACAGAGGACAAGAATAATATCACTTCTACTGGTGGTGTTTGGGAACTGCAGGTCTTGCTTC 7520 Db
AGAACAAGAAAAAGAAAAAGAAGAAGAAAAGAAAAGAA	Y 7401 AGAAGGAATTAAAGCCATTGTGAAGACTTCTGATAATATTACTGAAAAAATGTAGATATTAC 7460
	Y 7341 ATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGG 7400 CY
	Y 7281 AGACGAAGTTAACAAAGAACAAGATAAAAAAGTAAAATGATGCTACGAAAAAAAA
	Y 7221 AACAGCTGTAGAAGAAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTT 7280 YY
	Y 7161 AGCAAATGCAAGAATCGGAAGGAAGCAATCGGAAGCCAATGTCTTGGTAAATAATTTTTGG 7220
	Y 7101 TTCCGTACGAGAAAAGTAAATGTAAACGGCAAAAGAGGAAAAAAAA
	Y 7041 TTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTGATTTGAC 7100
	y 6981 TTCGAATTCCTTGACAGCCGGTGGAGGAGGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGT 7040
B061 TTATTTGAAAGTTACGAAAATCCGGAAGAATTTTTCATGCAGATAATGTGAATAT	Y 6921 TATCGATCATAGTACTTTACACTCTTCTACTGATGTAAAATGTAAAAGCTCTTAATAAAAT 6980 Y
	Y 6861 TGCAGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATTGCAAATAAGGTAGAAACAGA 6920 Db
	6801 AATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCAGCCGGAGCTGGAATTCT 6860 Db

중 음 중

음 성

유 성

음 성 음

ち 음 ち

음 성

밁

2 2 2 2 2 2

유 성

ð

음 성 음

용 ð 밁 S 밁

밁 S

```
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
A58933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unidentified unidentified unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5361 bp
Sequence 2 from Patent WO9641877,
A58933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Other
Other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Druilhe, P. and Daubergies, P. MALARIAL PRE-ERYTHROCYTIC STAGE POLYPEPTIDE PACENT: WO 9641877-A 2 27-DEC-1996; PASTEUR INSTITUT (FR)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A58933.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAATAAAATGAAAACAAAGATAATGTGATAGTACAAGAAATAATGAACGAAGATGTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTAAATATTCTTGGAAAAG 9139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAGAAAAATGAAAGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAAGAAGAAGTTAAAAAAAGAGTAAACAAAGAAGTTAACAAAAGAGTAAACAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          publication AU 6309696 970109
publication FR 2735478 961220.
Location/Qualifiers
                                                                                           VAENVESVAENVESVAENVESVAENVESVAPSVESVAPSVESVAPSVESVAPS
ENVERSVAENVESVAENVESVAPSVESVAPSVESVAPSVESVAPS
ENVERSVAENVESSVAENVESVAPSVESVE
ENVERSVAENVESSVAENVESVAPSVESVAPS
VESVEENVESVAPSVESVAPSVESVAPSVESVAPS
VESVEENVESVAPSVESVAPSVESVAENVESVAENVESVAPSVESVAPS
VESVEENVESVAPSVESSVEENVESVAENVESSVAENVESVAENVESVAPTVES
EIVAPSVESVAPSVESSVEENVESVAENVESSVAENVESSVAENVESSVAPTVESI
VAPSVESVAPSVESSVAENVATULSINILLGGIEFESIKOSILNEIEEVEENV
TTILLENVESTTAESVTTFSNILEEIQENT ITNDTIEEKLEELHENVLSAALENTQSE
EKKEV LOVIEVKESVAPSVESSVAENVATULSINILLGGIEFESIKOSILNEIEVERNV
TTILLENVESTTAESVATTLIETVEQAESKAANTITEIERLEEHDILGMPKSIE
KKENTOLVIESVKESVAENVASILIDNIENKKEGILNKAPFSIEDNIKGIQOETVTEHVEQNVY
VDUVVAPAKOOPIGILNEAGELKEMFFYLLENISSIESSVITVESSIKOEVQKEVEKET
VSIIEBMEENIVDVLEBEKEDLTDKMIDAVESSIEISSDSKESTESSIKOKKOOLIKOME
KLKELEKALSEDSKEIIDAVGSILNEAGELKENTENJITSKLIETGELAEDILEVEADLIKOME
KLKELEKALSEDSKEIIDAVGSILNEAGELKOTSTAVITOLESSIEISOLIKOMEEKVSOL
KOLBEDILKEVGEIKELESEILEDYKELKTIETDILEEKDLEDUEDLEGEDALEKVSOL
KOLBEDILKEVGEIKELESEILEDYKELKTIETDILEEKDENIKGELKOS
ILDMLKODMELODMOKSSLEDVTTKLGREVESKOLISONIKGALEDOLEEVEDLIKOS
ILDMLKODMELODMOKSSLEDVTTKLGREVESKOLISONIKGALEDOLEEVEDLIKOS
ILDMLKODMELODMOKSSLEDVTTKLGREVESKOLISONIKGALEDOLEEVEDLIKOS
ILDMLKODMELODMOKSSLEDVTTKLGREVESKOLISONIKGALEDOLEEVEDLIKOS
ILDMLKODMELODMOKSSLEDVTKLGREVESKOLISONIKGALEDOLEEVEDLIKOS
ILDMLKODMELODMOKSSLEDVTKLGREVESKOLISONIKGALEDOLEEVEDLIKOS
ILDMLKODMELODMOKSSLEDVTKLGREVESKOLISONIKGALEDOLEEVEDLIKOS
ILDMLKODMELODMOKSSLEDVTKLGREVESKOLISONIKGALEDOLEEVEDLIKOS
ILDMLKODMELODMOKSSLEDVTKLGREVESKOLISONIKGALEDOLEEDOLEGENEEVENIKGALISONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGALIONIKGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VAENVEEIVAPTVEEIVAPTVEEIVAPSVVESVAPSVEESVEENVEESVAENVEESVA
ENVEESVAENVEESVAENVEESVAENVEEIVAPTVEEIVAPSVVESVAPS
VEESVEENVEESVAENVEESVAENVEESVAENVEESVAENVEESVAENVEESVAENVE
ESVAENVEEIVAPTVEEIVAPTVEEIVAPSVVESVAPSVEESVEENVEESVAENVEES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="mtnsnyksnnktynennneqittifnrtnmnpikkchmrekink
ypflikitttilimanqydnnsdinksmkknyyvdkkliklebediidillidnlinig
ebykekildllebentltesvddnkulebediikenillebegovidditaksvksvqoe
govektidllebentltesvddnkulebediilebegovidditaksvdesidssie
QNHVEBKVEBSVEBNDEBSVEBNVBENVBENVEBILBESVABNVEBSIDSSIE
ENVAPTVEEIVAPSVVESVAPSVEESVEENVEBSVABNVEBSVAENVEBSVAENVEBS
                     EEDKVEDIDEDIDEDIGEDKDEVIDLIVQKEKRIEKVKAKKKKLEKKVEEGVSGLKKH
VDEVMKYVQKIDKEVDKEVSKALESKNDVTNVLKQNQDFFSKVKNFVKKYKVFAAPFI
SAVAAFASYVVGFFTFSLFSSCVTIASSTYLLSKVDKTINKNKERPFYSFVFDIFKNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /protein_id="CAA03511.1"
/db_xref="GI:3714408"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  note="unnamed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="unidentified"
/mol_type="unassigned DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:3714407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .5361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        xref="taxon:32644"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        06-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                           ঠ
                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                             밁
                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 1747; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1073
6080 AAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAAGAAAAAATAAGTAATA
                                                                                                                                                                                                                                                                                       1553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAGTGTAGCTGAAA 1252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                АСССАЛАТСТТААТСТТСТАССТСАЛАЛТАССВОТСЛАСТССТСАСЛАЛТСССВАСАСТСС
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGAAAAAATATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAACAATCAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u> АТСТАСАТССАРАВАСАТСАРАВАЕСНАТАВАТАСВА---ТТСССССЕВАВАТССАРАТСЕВЕ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ĠŢĠŢŢĠŅŊĠŊŊŊĠŢŊŢŊĠĊŢŢĊŊŊĠŢĠŢŢĠŊŢŖŊŊŊĠŊŢŖŢŊŊĠŎŢŖŢŢĠŊŊĠŊŊŊ
                                                                                                                                                                                                                                                                                                                                                                                       ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAAT 5839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GC---AAATCTCATTCATCTATTAAAACAATTGGAATTGGAAGCTGGAGTTGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA 1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA 1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGTTGAAGAAAGTGTAGAAGAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                   GTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAA 1672
                                                                                                                                                                                                                                    CCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTG
                                                                                                                                                                                                                                                                                       TCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAA
                                                                                                                                                                                                                                                                                                                                  TAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                          TAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                CTAAAGAAGAAACAGATGATTATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 116.2; DB 6
Pred. No. 4.9e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches 2373;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5361;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            832
                                                                                        1732
                                                                                                                                                                                                                                         6019
                                                                                                                                                                                                                                                                                            1612
                                                                                                                                                                                                                                                                                                                                               5959
                                                                                                                                                                                                                                                                                                                                                                                               1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14;
```

중 유

GAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTG	TCGAAACTGAGGAAATAAAGGACAGTATATTAAATGAGATAGAAAGAA	2324 TAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTTAGCTCGAACTG 2383 6737 ATGAATCAAACACGAGAGCAAGAGTGTAAAATTCTAAAAATCTCAAAAAGTGTTGAAACAAGT 6793	2144 TTGAAGAAAGTGTAGCTGAAAATGTTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCG 2203 6557 GAACCGTTTCCGTAAATCAATTTGCAGGAAGACGGAAGTAGATGTGGAAGAAGCAAAGA 6616	1964 TAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTG 2023 6380 TAGGAGCTTCTTCTGATACCAATATTATAAAAAGAAATACCAAGAAATTGTTGAAA 6436	1733 ATGITGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCGTAGCTCCAACTGTTG 1786 6140 AAAAAGGATTTGTTACCAATAGTTCAGCTACCTACTTTAAAAATCTTTATTGGCAAATG 6199
8 6 8 6 8 6	2	Q B Q B Q	1	3 4 4 4 4 6	2
8088 AAGAAGTATTTTCATGCAGATAATGTGAATATGGAAGCACATAAAATGAAAGTAAC 8147	3578 TTAAAGATÁÁAGAÁAAAGATGTTTCÁCTAGTÍGÍTTGÁAGAAÁTTCÁATGATATÁG 3637 7982 CTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGAGCAGG 8027 1	7802 CAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAAGAATG 7861	7626TACAGGAAATGTTGCTTTAACAGCATATCAAAGGTCCTGTAGGAGCATTGGGAATAG 7681 3278 TTCCTGCTATGAAAGATCAATTTTTAGGAAGATATTAAATGAGGCCAGTAGGAGATAAAAATTCTA 7741 7682 GAGCTGCCTATGAAAGATAAATTCTAAATGGAAGACAATATCAAAAAAATATCA 7741	7451 TAGATATTACAACAGAAATITATIAACAGATATGATTCACTTCTACTGGTGGTTTGGGAACTGCAG 7510	

 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5
 5

음 성 음

```
망
   RESULT 19
AR131272
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         중 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 중 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음 성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                 ş
                                                                                                                                                                           밁
                                                                                                                                                                                                     S
                                                                                                                                                                                                                                       뫄
                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4227
AR131272 5361 bp
Sequence 2 from patent US 6191270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -- AAGTAAAAGAATCAAAGAACTTGAAAGTGAAATTTTAGAAGATTATAAAGAATTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAGATCGAAAAAGTATCTGATTTAAAAGATCTTGAAGAAGATATATTAAAAAG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAAACTGCTAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAAGTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCCAGAATTGTTGGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAGCTTTGGCTAAAAATGAAAATTATGGAAATTTAAAAGGAACTGGAGGAGCCTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTCGAAGAAGAAGAAGAATAAAAGATCTTGAAGCAGATATATAAAAAGAAGTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ÄACTÄTTGAAÄCAGÄTATTTÄÄÄAAGAGAAAAAGÄAATÄÄÄAAÄÄÄÄTCÄTTTTGAAAA
                                                                                                                                                                                                   GAATGTACACATTTCCAATGAGATGGATATTAAAAATTTTGGCAAAGCAGTATGCATCTTC
                                                                                                                                                                                                                                                                                                                                                   AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATT
                                                                                                                                                                                                                                                                                                                                                                                         AGAAGAAGATATAGAAGAAGATAAAGTTGAAGATATAGATGAAGATATAGATGAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                 CTATGGTGGAATTGGTATTGGAAATGTGATGTAAATAATGTGATTAAGAAAAATGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAGAAAAAATAACAAAAAAGAAAGTAAGGTTTGATATTAAGGATAAGGAACCAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTAAAAGATGTTTTATCTAGTGCATTAGGCATGGATGAAGAACAAATGAAAACAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGATATGGATAAGGAAAGTTTAGAAGATGTAACAACAAAACTTGGAGAAAGAGTTGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAACATATAATAAGTGGTGATGCGCATATAAAAGGTTTGGAAGAAGATGATTTAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCATTAGAAGTTGAAGAAGAAAAAAATTAGAAGAAGTACACGAATTAAAAGAAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGC
                                                                                                                                                                                                                                                 TACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTÁGATGA-TTTAAAAGGAAGTÁTATTAGACÁTGTTAAAGGGGAGATATGGA--ATTAGG
                                                                                                                                       тслаттаатаассладааттсалдаатаатааттастттассатсаа
                                                                                                                                                                             <u>AÄÄACACGTAGACGAAGTAATGÄAATÄTGTTCÄÄÄÄAATTGATÄÄAGÄAGTTGATAAAGA</u>
                                                                                                                                                                                                                                                                                                                      AGGTGAAGACAAAGATGAAGTTATAGATTTAATAGTCCAAAAAAGAGAAAACGCATTGAAAA
                       linear
                                                                                                                                              9274
                       PAT
                       16-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                      밁
                                                                       á
                                                                                                           밁
                                                                                                                                   Ş
                                                                                                                                                                         B
                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 1747; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5126
       5900 TAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unkiu-...
Unclassified.
1 (bases 1 to 5361)
1 (bases 1 to 5361)
Druilhe, P. and Daubersies, P.
Malarial pre-erythrocytic stage polypeptide Malarial Uncartion/Qualifiers
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AR131272
AR131272.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGAAAAAATATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAACAATCAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGTAGATGCAAAAGATCAAAAAACAATAAATACAA---TTGCCGGAAATGCAAATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAA
                                         ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                          TAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGG
                                                                                                                                 GAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAAT
                                                                                                                                                                                                                                                    TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA
                                                                                                                                                                                                                                                                                   AAAATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAA
                                                                                                                                                                                                                                                                                                                          ATGTTGAAGAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                         TTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACAC
                                                                                                                                                                                                                                                                                                                                                                                             GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                              AGGCAAATGTTAATGTTCTAGCTGAAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGTTGAAGAAAGTATAGCTTCAAGTGTTGATGAAAGTATAGATTCAAGTATTGAAGAAA
                                                                                                             GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                  ATGTTGAAGAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                 GC---AAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="unknown"
/mol_type="unassigned
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:14119597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 116.2; DB 6;
Pred. No. 4.9e-06;
0; Mismatches 2373;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                molecules
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67;
                                                                                                                   1492
                                                                                                                                                                                                                                                                                                                             1312
                                                                                                                                                                                                                                                                                                                                                                5662
                                                                                                                                                                                                                                                                                                                                                                                                 1252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14;
```

3698 CTGTTGAAATAAATGACATTACTAGCAAACTTATTGAAGAAACTCAAGAGTTAAATGAAG 3757	6974 ATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTTGCAGCAGTTACCG 7033 Db	
ATTIGADAGTGTTGAGAAAGTTTTAGAATTGAAAAATATTGGAAGAGGAG	6914 AAACAGATATCGATCATAGTACTTTTACACTCTTCTACTGATGTAAAATGTAAAAGCTCTTA 6973	0 \
	6854 GAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATTGCAAATAAGGTAG 6913	0 \
TAGATGCAGTAGAAGAATCCATAGAAATCTACAAGTGGAAAAAGAAAACTGAATGTA	6794 TAGATGTAATAGCAGAAATGAGATAAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTG 6853	0 \
7002 CHAMMOGALLANCUG INGGAGUGIAGE GECUGANGUCALIAIC CAMANGGAGAGACAAGATGA 7001	6737 ATGAATCAACACGAGAGCAAGAGTGAAAAATTCTAAAATTATGACTCGAAACAAGT 6793	0 \
TIPAGGATGAACCGGTTCAAAAAGAGGTAGAAAAAGAACTGTTAGTATTATTGAAGAAA	6677 CCGCAGTCGGAGTGGCAAAAGGAGCTGGAATTGGAGCAGTGGCAGTTACCAAAG 6736	0 \
TGTTTTTAATTTGGAAGATGTATTTAAAAGTGAAAGTGATGA	6617 TTTTGGTAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATG 6676	0 \
TITCTIGCTATGAAAGATCAATTTTTAGGAATATTAAATGAGGAGGAGGTTGAAAGAAA	6557 GAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAAGAAGA 6616	0 \
AAGGTGTTCAAGAAACTGTAACTGAACATGTAGAACAAAATGTATATGTGGATGTTGATG	6497 AAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCCGGGGTAGGAGCCGGAGTGGCAG 6556 Db	
TAATATAGAAAATATGAAAGGAAGGTTTATTAAATAAAT	6437 AAACTACAATGTTCTGATGAAGGTTTCGGAGAAAGAGCTGAAATTACAGCAGATTCTAAGC 6496	
TAGITAGE TO THE TAGITAGE AND THE TAGITAG	6380 TAGGAGCTTCTTGTGATACCAATATTATAAAAGAAATACCAAGACAAGA	
AAGGAATACTACAAGAAAATTTATTAACAGGTATGTTTCGAAGTATAGAAACCAGTA	6320 GAGATTACACGAATTCAATCGGAGTAGGTAGGTTCTGTTGGTGGTAGAATGTAGGAG 6379	0 \
	6260 AAACAGAAGCTCTTGTAGAAAATTCTATATATAGCAAAACATTATTCTGTAAAATCAG 6319	0 \
ACGADACTGTATTTAATACTGTATTAGATAAAGTAGAGGAAACAGTAGAAATTAGCGGAG	6200 CCGCTGGTTCAGGACAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAG 6259	
	6140 AAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATG 6199	0 \
	1786	
	6020 CTAAAGAAGAACAGATGATTATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATA 6079	
TAGAAGAACTCCACGAAAATGTATTAAGTGCCGCTTTAGAAAAATACCCAAAGTGAAGAGAG	5960 CCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTG 6019	
2624 GTAACATATTAGAGGAGATACAAGAAAATACTATTACTAATGATACTATAGAGGAAAAAT 2683 7034 GAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTG 7093	1553 TCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAA 1612	Ū

음 성 음

8 8 8 8 8 8 8

8 8 8

중 유

δ

```
8808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACAAAAAATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGATCGAAAAAGTATCTGATTTAAAAGATCTTGAAGAAGATATATTAAAAG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAACATGATATAACGACGACGTTGGATGAAGTTGTAGAATTAAAAGATGTCGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAAGATTCTAAAGAAATAATAGATGCAAAAGATGATACATTAGAAAAAGTTATTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGGGTTGGAGTCACCAAGGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGAAGCAGATTTAATAAAAGATATGGAAAAATTAAAAGAATTAGAAAAAGC--ATTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGAAGTATTTTTCATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCCAGAATTGTTGGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTAAAAGATGTTTTATCTAGTGCATTAGGCATGGATGAAGAACAAATGAAAACAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGATATGGATAAGGAAAGTTTAGAAGATGTAACAACAAAACTTGGAGAAAGAGTTGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCATTAGAAGTTGAAGAAGAAAAAAATTAGAAGAAGTACACGAATTAAAAGAAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTCGAAGAAGCTGAAGAAATAAAAGATCTTGAAGCAGATATATTAAAAGAAGTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACTATTGAAACAGATATTTTAGAAGAGAAAAAAGAATAGAAAAAGATCATTTTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -- AAGTAAAAGAATCAAAGAACTTGAAAGTGAAATTTTAGAAGATTATAAAGAATTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGC 8387
                                                                                                                                                                                                                                                         CTATGGTGGAATTGGTATTGGAAATGTTGATGTAATAATGTGATTAAGAAAAATGTAGA
                                                                                                                                                                                                                                                                                                                                 TGAAATÁGTAGAÁGTTGAAATGÁÁAGÁTGAAGÁTATÁGÁAGAÁGÁTGTÁGÁÁGAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAGAAAAAATAACAAAAAAGAAAGTAAGGTTTGATATTAAGGATAAGGAACCAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGTAGATGA-TTTAAAAGGAAGTATATTAGACATGTTAAAGGGAGATATGGA-ATTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAACATATAATAAGTGGTGATGCGCATATAAAAGGTTTGGAAGAAGATGATTTAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTA
GGTTAAAGCGAAAAAAAAAATTAGAAAAAAAAAGTTGAAGAAGGTGTTAGTGGTCTTAA
                                                   TACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATC
                                                                                                                                                                AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATT
                                                                                                                                                                                                                       AGAAGAAGATATAGAAGAAGATAAAGTTGAAGATATAGATGAAGATATAGATGAAGATAT
                                                                                                                                                                                                                                                                                                                                                                               AAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAA
                                                                                                             <u> AGGTGAAGACAAAGATGAAGTTATAGATTTAATAGTCCAAAAAGAGAAACGCATTGAAAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8147
                                                                                                                                                                                                                                                                             9047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4286
     4823
                                                         9167
                                                                                                                                                                                                                                                                                                                                 4643
                                                                                                                                                                                                                                                                                                                                                                                        8987
                                                                                                                                                                                                                                                                                                                                                                                                                                              4583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3988
                                                                                                                                                                                                                          4703
```

5 밁 Ś 밁 ð 밁 S 밁 Ś ₽ Ś 밁 Ş 밁 5 밁

\$ \$ \$ \$ \$ \$ \$

밁

S

8 8 8 8

음 성 음 성

```
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEA7010
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
Submitted (16-JUN-1998) Daubersies P., Biomedical Parasitology.
Pasteur Institute, 28, Rue du Dr Roux. Paris CEDEX 15, 75724,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 liver stage antigen-3;
Plasmodium falciparum
Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protection in chimpanzees
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Daubersies, P., Thomas, A.W., Millet, P. and Brahimi-Zeghidour, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Alveolata; Apicomplexa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Daubersies, P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LSA-3, a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            АJ007010.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAATGTACACATTTCCAATGAGATGGATATTAAAAAATTTTGGCAAAGCAGTATGCATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTATCTADAGCTTTAGAATCAAAAATGATGTTACTAATGTTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCAATTAATAACCAAAAATTCAAAAAAATATTACTTTAGCATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>AAAACACGTAGACGAAGTAATGAAATATGTTCAAAAAAATTGATAAAGAAGTTGATAAAGA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 5529)
                    ENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESSYAENVESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      conserved pre-erythrocytic malaria antigen can induce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QNSEKQESVSENVQVSDELFNELLNSVDVNGEVKENILLEESQVNDJIFNSLVKSVQQE
QQHNVEKVEESVERNDEESVAFSVEESVESVAESVEESVASLVEESIASSVEESVESVAENVEES
ENVAPTYEEI TAPSVVESVAPSVEESVESVEESVAENVEESSVAENVEESVAENVEESSVA
VAENVEEI VAPTVEEI VAPTVEEI VAPSVVESVAPSVEESVEENVEESSAENVEESSVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /translation="mtnsnyksnnktynennneqittifnrtnmnpikkchmrekink
yffliklitctilimavqydnnsdinksmkkntyvdkklnklfnrsigesqvngelas
eevkekildlleegntltesvddnknleeaedikeniilsnibepkeniidnllnnig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="liver stage antigen-3"
/protein_id="CAB65343.1"
/db_xref="GI:6688931"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                join(1. .198,
/gene="LSA-3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /mol_type="genomic DNA"
/strain="K1"
DLEADILKEVSSLEVEEEKKLEEVHELKEEVEHIISGDAHIKGLEEDDLEEVDDLKGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="GOA:Q9U0P0"
/db_xref="UniProt/TrEMBL:Q9U0P0"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="LSA-3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                db_xref="taxon:5833"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Plasmodium"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      dev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clone="k1.2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GI:6688930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               stage="pre-erythrocytic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .198,367.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (malaria par
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .5529)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9 bp DNA
gene, strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           parasite P. falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       falciparum'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Haemosporida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plasmodium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ANI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4883
```

```
S
                                 밁
                                                         S
                                                                                           밁
                                                                                                                           Ş
                                                                                                                                                      밁
                                                                                                                                                                                      Ş
                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                      중 음
                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                    ક
                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 1747; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      intron
                                     1481
                                                                                                                                                                                                                                                              5483
                                                                                                                                                                                                                                                                                                                              5423
                                                                                                                                                                                                                                                                                                                                                                1181
                                                                                                                                                                                                                                                                                                                                                                                                                              1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5126
                                                                                                                                 5603
                                                                                                                                                                                                                                                                                              1241
                                                                                                                                                                 1361
   GC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGAAAAAATATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCA
                                                                                                 ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                              TTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACAC
                                                                                                                                                                GTGTÄGCTGAAÄÄTGTTGAÄGAAAGTGTAGCTGAAAÄTGTTGAAGAÄAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                            TTGTÄĞÜTCÜAAGTGTTGTÄĞAAAGTĞTGGCTCÜAÄGTGTTGÄAGAAĞTĞTAGAAGAAA
                                                                                                                                                                                                                                                                                                                            AAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTC
                                                                                                                                                                                                                                                                                                                                                            ATGTTGAAGAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                           ATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                           GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGTTGAAGAAAGTGTAGAAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGTTGAAGAAAGTATAGCTTCAAGTGTTGATGAAAGTATAGATTCAAGTATTGAAGAAA
                                                                 AAAATACTTCTGCACATATAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAA
                                                                                                                                                                                              AGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGC
                                                                                                                                                                                                                                ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                              ATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAAACAATCAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTAGATGCAAAAGATCAAAAAACAATAAATACAA---TTGCCGGAAATGCAAATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
   - AAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="region R1
/rpt_type=OTHER
4777. .4896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4777...4896
/note="region R2"
/rpt_type=OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      835.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ILDMLKGDMELGDMDKESLEDVTTKLGERVESLKDVLSSALGMDEEQMKTRKKAQRPK
LEEVLLKEEVKEEPKKKITKKKRFDILDKEPKDEI USVEMKDBI EEDFEDI EEDI
EEDKLLKEEVKEEPKKKITKKKRFDILDKDKEDDI EEDFEDI EEDI
EEDKVEDI DEDI DEDGEDKOEVDLIJVQKEKRIEKVKAKKKLEKVEEGVGSLKKH
VDEVMKYVQKI DKEVDKEVSKALESKNDVTNVLKQNQDFFSKVKNFVKXKKVFAAPFI
SAVAAFASYVVGFFTFSLFSSCVTI ASSTYLLSKVDKTI NKNKERPFYSFVFDI FKNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       367.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KHYLQQMKEKFSKEKNNNVI EVTNKAEKKGNVQVTNKTEKTTKVDKNNKVPKKRRTQK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="LSA-3"
199. .366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     190. .5526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'gene="LSA-3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     number=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'gene="LSA-3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'gene="LSA-3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       number=2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene="LSA-3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      number=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .5529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 2625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 116.2; DB 2;
Pred. No. 4.8e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches 2373;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                 5722
                                                                                                                                                                                                                                                              5542
                                                                                                                                                                                                                                                                                              1300
                                                                                                                                                                                                                                                                                                                              5482
                                                                                                                                                                                                                                                                                                                                                                                            5422
                                                                                                                                                                                                                                                                                                                                                                                                                            1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                           5362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1000
   5779
                                                                                                                                                                                                                              1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5185
                ঠ
                                                밁
                                                                        S
                                                                                                               밁
                                                                                                                                      Ş
                                                                                                                                                                 문
                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             닭
                  6794
                                                                                                                                               6677
                                                                                                                                                                             2432
                                                                                                                                                                                                             6617
                                                                                                                                                                                                                                                                                                                                            6497
                                                                                                                                                                                                                                                                                                                                                                                                          6437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1721
                                                                                                                                                                                                                                             2372
                                                                                                                                                                                                                                                                             6557
                                                                                                                                                                                                                                                                                                             2312
                                                                                                                                                                                                                                                                                                                                                                             2252
                                                                                                                                                                                                                                                                                                                                                                                                                                          2192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1541
TAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTG
                                                                                                                                        CCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTGGCAGTTACCAAAG
                                                                                                                                                                                                                                                                      GAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAAGCAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCTGTAAAATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                               ATGAATCAAACACGAGAGCAAGAGTGAAAAATTCTAAAATT---ATGACTCGAAACAAGT
                                                                                                                TAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTCCAACTG
                                                                                                                                                                               TTGAAGAAAGTGTAGAAGAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTG
                                                                                                                                                                                                                                               TAGCTCCAACTGTTGAAGAATTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTG
                                                                                                                                                                                                                                                                                                             TTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCG
                                                                                                                                                                                                                                                                                                                                            AAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCCGGGGTAGGAGCCGGAGTGGCAG
                                                                                                                                                                                                                                                                                                                                                                             TAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                          AAACTACAATGTCTGATGAAGGTTTCGGAGAGGAAGCTGAAATTACAGCAGATTCTAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGTGTTGGTGGAAATGTAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTGTAGCTGAAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTGTTGTA---GAAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGTTGAAGAAAGTGTAGCT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTANAGANGANACAGATGATTATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATAACGATAGCAGAAT
                                                  TTGAAGAAATTGTAGCTCCAAGTGTTGAAGAAAGTGTAGCTCCAAGTGTTGAAGAAAGTG
                                                                                                                                                                                                             TTTTGGTAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -GAAAATGTTGAAGAAATCGTAGCTCCAACTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1600
                                                                                                                                                                               2491
                                                                                                                                                                                                               6676
                                                                                                                                                                                                                                                 2431
                                                                                                                                                                                                                                                                               6616
                                                                                                                                                                                                                                                                                                                                                                                                             6496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1660
                                                                                                                                                                                                                                                                                                             2371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2071
```

1915 AAAGAARGAAGTAATRAGATGTAATTGAAGAAGTACAATRACTGTAAGAAATAATTATAAGAAGTACCAATTAA 2971 1251 AGCAAACAGCAGCAAATGCAGGAATCGAAGGAAGAAGTACGAAGTACGAATTACAATTACCACTTTAA 2971 1251 AGCAAACAGCAGCAAATGCAGGAATCGAAGGAACAGAAGTACGAAGTACGAATGTCTTGGTAA 7210 1251 AGCAAACAGCAGCAAATGCAGGAATCGAAGAAGAACAGAAGTACTACAATTACCGAAATTACTGAAA 3031 1271 TAGAACCTGTAGAACAGAAAAAAAAATTACAAATTACCGAAATTACCGAAATTACCGAAATTACTGAAA 3031 1272 TAGAACCTGTAGACAAAGAAAAAAATTACAAATTACCGAAATTACCGAAATTACAAAATTACAATTACAAAATTACAAATTACAAAATTACAAATTACAAAATTACTAC	TIGCTIGAAAACGTIGCAACAAATITATCAGACAATCTITTAAGTAATTTATTAGGTGGTA GAATTCTTGCAGCCGGAGTATCTGGAGTGGTTCTGTCAATAATATTAGTTAATAAAGGTAG TCGAAACTGAGGAAATAAAGGACAGTATTTAATCAGATAATAATAATATATCAAATAAAGGTAG TCGAAACTGAGGAAATAAAGGACAGTATATTAAATGAAGAAAAATGA AAACAGATATCGATCATAAAAGAACGTTTACACCTCTTCTACTGATGTAAAAGTAAAAGCTCTTA AAACAGATATCGATACTAGAAAACGTAGAAGAAACTACAACTACTATAAA TAGAATTTCGAATACCTTGACAGCCGGTGGAAGACCTCTGAAAAATTACTACTATTAAATTTAGAGGAAAAATACTACTATAAAATTACTAATTAGAGGAAAAATACTACTATAAAATTACTAATAAATTACTAATAAAATTACTAATAA
8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
3984 AGAMATICTINANGANATIANGATGCAAAAGATGAAAAAAAATTTCTCAAACAAAAAAAAA	7922 GCCCTTCTAAAGGAATTGGAAGAAGAAATCAATGTCAAAGTGGAAAAAAAA

8 8 8 8 8 8 8 8

8 8 8 8

8 8 8 8

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 21
AX428966
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ 🖁 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                밁
                                                                                                                                                              밁
                                                                                                                                                                                           Ş
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음 성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
 Ś
                                                           ঠ
                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 1747; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
   5483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4932
                                                                                                                                                                                                                                                                                                                                                                                  5126 GTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cohen, J. and Druilhe, P.
Immunogenic compositions comprising liver stage malarial antigens
Patent: EP 1201250-A 1 02-MAY-2002;
SMITHKLINE BEECHAM BIOLOGICALS S.A. (BB) ; INSTITUT PASTEUR (FR)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AX428966
Sequence 1 from Patent |
AX428966
AX428966.1 GI:21540347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unidentified unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGA
                                                                                                                                                                                                                                                    GAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAAACAATCAGTTA
                                                                                                                                                                                                                                                                                                                                                            GTGTTGAAGAAAGTATAGCTTCAAGTGTTGATGAAAGTATAGATTCAAGTATTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTATCTAAAGCTTTAGAATCAAAAATGATGTTACTAATGTTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCAATTAATAACCAAAAATTCAAAAAATAATATTACTTTAGCATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAATGTACACATTTCCAATGAGATGGATATTAAAAATTTTGGCAAAGCAGTATGCATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATT
 ATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGAAA
                                TTGTÄGCTCCAAGTGTTGTÄGAAAGTGTGGCTCCAÄGTGTTGÄAGAAAGTGTAGAAGAAA
                                                                AAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTC
                                                                                                                              ATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAA
                                                                                                                                                                GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                            TAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGAAAAATATCA
                                                                                                                                                                                                                                                                                              ATGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAA
                                                                                                                                                                                                                                                                                                                            AUGTAGATGCAAAAGATCAAAAAACAATAAATACAA---TTGCCGGAAATGCAAATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAACACGTAGACGAAGTAATGAAATÄTGTTCÄÄÄÄAATTGATÄÄAGÄAGTTGATAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ĀĠĠŦĠĀĠĀĊĀĀĠĀŦĠĀĀĠŦŤĀŤĀĠĀŤŦŦĀĀTĀĠŦĊĊĀĀĀĀĠĀĠĀĠĀĀĀĊĠĊĀŢŦĠĀĀĀĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAGAAGATATAGAAGAAGATAAAGTTGAAGATATAGATGAAGATATAGATGAAGATAT
                                                                                                ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                              GTGTTGAAGAAAGTGTAGAAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="unassigned DNA"
/db_xref="taxon:32644"
/note="Kl Parasite Strain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .5529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        organism="unidentified"
                                                                                                                                                                                                                                                                                                                                                                                                                                          1.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5529 bp
Patent EP1201250
                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                         Score 116.2; DB 6;
Pred. No. 4.8e-06;
0; Mismatches 2373;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA
                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5098
                                                                                                                                                                                                                                                                                                                                                                                                                             67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4931
                                                                                                                                                                                                                                                              5302
                                                                                                                                                                                                                                                                                              1060
                                                                                                                                                                                                                                                                                                                                                              1000
                                                                                                                                                                                                                                                                                                                                                                                              5185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9047
                                                                                                1240
                                                              5482
   5542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
               S
                                               맑
                                                                          S
                                                                                                           밁
                                                                                                                                     Ş
                                                                                                                                                                   밁
                                                                                                                                                                                                     S
                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                   र्
                                                                                                                                                                                                                                                                                                   몽
                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1301
                6557
                                                2312
                                                                                                                                                                                                             6380
                                                                                                                                                                                                                                                                             6320
                                                                                                                                                                                                                                                                                                             2072
                                                                                                                                                                                                                                                                                                                                             6260
                                                                                                                                                                                                                                                                                                                                                                             2012
                                                                                                                                                                                                                                                                                                                                                                                                            6200
                                                                                                                                                                                                                                                                                                                                                                                                                                            1955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6080
GAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAAGAAGAA
                                                                                                                                        AAACTACAATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGATTCTAAGC
                                                                                                                                                                                                                                                                        GAGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGTGTTGGTGGAAATGTAGGAG
                                                                                                                                                                                                                                                                                                                                 AAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCTGTAAAATCAG
                                                                                                                                                                                                                                                                                                                                                                                                   CCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTTGAAGAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                TTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCG
                                                                                                                                                                               TTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTG
                                                                                                                                                                                                                                                 TÄGCTCCAÄCTGTTGAÄGAAATCGTÄGCTCCAACTGTTGAAGAAATTGTÄGCTCCAAGTG
                                                                                                                                                                                                                                                                                                             TTGAÁGÁAAGTGTAGCTGÁÁÁÁTGTTGAÁGAÁAGTGTÁGCTGAAAATGTTGAÁGÁAATCG
                                                                                                                                                                                                                                                                                                                                                                             TGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTGTAGCTGAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTGTTGTA---GAAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGTTGAAGAAAGTGTAGCT-----GAAAATGTTGAAGAAATCGTAGCTCCAACTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGTÄGCTGÄÄÄATGTTGÄAGÄÄÄGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTAAAGAAGAAACAGATGATTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GC---AAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    atgitgaagaaatcgtagctccaactgttgaagaaatcgtagctccaactgttgaagaaa
                                                                               AAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCCGGGGTAGGAGCCGGAGTGGCAG
                                                                                                                TAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATG
                                                                                                                                                                                                             6139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1600
                  6616
                                                                                                                                                6496
                                                                                                                                                                                                                                                                                                                                                                             2071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1360
                                                                                                                                                                                                                                               2191
                                                                                                                                                                                                                                                                                                             2131
                                                                                                                                                                                                                                                                                                                                                                                                             6259
                                                                                                                                                                                                                                                                                                                                                                                                                                             2011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1780
                                                                                                                2311
                                                                                                                                                                                 2251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5839
```

GCTATTAGANANATATTGANAGTANTTGANAGTANTATTGANAGTANATGANAGANA	TACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAG	Qy 8628 CTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAAATGTTAGATCGGATAT 7625	Qy 8568 GTCTTGCTTCCGCATCAGGAACAGTGACAGTTACAAATAATAAAAGAAATTCCGGAGTTA 7570	TAGATATTACAACAGAGAGAAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAG 7510	Qy 8448 ATACTCAGGGAGAAGTTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATG 7450 AGGGAATACAAGAAAATTTATTAACAGGTATGT AAGGAATACAAGAAAATTTATTAACAGGTATGT AAGGAATACAAGAAAATTTATTAACAGGTATGT AAGGAATACAAGAAAATTTATTAACAGGTATGT AAGGAATACAAGAAAATTTATTAACAGGTATGT AAGGAATACAAGAAAATTTATTAACAGGTATGT AAGGAATACAAGAAAATTTATTAACAGGTATGT AAGGAATACAAGAAAATTTAACAGGTATGT	Qy 8388 Db 4215	TAAAAACTTTAGACGAAGTTAACAAAGAACAAGAATAAAAAAGTAAATGATGCTACGAAAA	Qy 8268 ATAATTTTGGAACAGCTGTAGAAGAAAAAATTCTGAAGGAAAAAGGAACAGAAGTTT 7270	Qy 8208 AGCAAACAGCAACTGCAGGAATCGGAGGAAGCAATCGGAGCCAATGTCTTGGTAA 7210	Qy 8148 ATTTGACTTCCGTACGAGAAAAAGTAAATGTAACGGCAAAAAGAGGGAAAAAAAAATATTA 7150 150	Qy 8088 GAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTG 7093	ATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTTGCAGCAGTTACCG 7033 Db 3866	6914 AAACAGATATCGATCATAGTACTCTTCTACTGATGTAAAAGCTCTTA 6973 6914 AAACAGATATCGATCATAGTACTCTTACACTCTACTGATGTAAAAGCTCTTA 6973 6914 AAACAGATATCGATCATAGTACTTTACACTCTACTGATAAAAGCTCTTA 6973 6914 AAACAGATATCGATCATACTATACACTGATAAAAGCTCTTAAAAAGCTCTTA 6973 6914 AAACAGATATCGATAGTACTACACTGTAAAAGCTCTTAAAAAGCTCTTAAAAAGCTTAAAAAGCTTAAAAAGCTTAAAAAGCTTAAAAAGGATGAAAAGTGTTAAAAAAAA	3746	3686	3626	3566 7802	6517 TITTUGIRAAAAAGCIUMGATIACAGCAAAACCITAINCILLULISCAAILUSAMAIG 6676
---	--	---	---	--	--	--------------------	---	--	--	--	--	---	--	------	------	------	--------------	--

5 8 5 8 5 8 5

B 8 B 8 B 8 B

8 8 8 8 8 8 8

8 8 8 8

```
RESULT 22
AX536317
LOCUS
DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
SOURCE
ORGANISM
   S
                                   밁
                                                             8
                                                                                                  밁
                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 8 8 8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  음 성
                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                   Query Match 1.2%;
Best Local Similarity 41.7%;
Matches 1747; Conservative
                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                    5126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4812
                                                                                                                                                                                                                                                                                                                                             Immunogenic compositions comprising liver stage malarial antigens Patent: WO 0238176-A 1 16-MAY-2002; GlaxoSmithKline Biologicals S.A. (BE) ; INSTITUT PASTEUR (FR)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1 from Patent
AX536317
AX536317.1 GI:25262747
                                                                                                                                                                                                                                                                                                                                                                                                                             Plasmodium falciparum (malaria parasite P. falciparum)
Plasmodium falciparum
Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
                                                                                                                                                                                                                                                                                                                                                                                                   Cohen, J. and Druilhe, P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AX536317
                                                                                                ĠTGTTĠAAĠAAGTATAĠĊTTCAAGTGTTĠATGAAAGTATAĠATTCAAGTATTGAAGAAA
                                                                                                                                 GTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAGAAGATATAGAAGAAGATAAAGTTGAAGATATAGATGAAGATATAGATGAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTATGGTGGAATTGGTATTGGAAATAATAATGTGATTAAGAAAAATGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAGAAAAAATAACAAAAAAGAAAGTAAGGTTTGATATTAAGGATAAGGAACCAAAAGA
   GAAAAGCGGCTGGAGTTGGAACAGTTGCTCATACAAATATTGGAAAACAATCAGTTA
                                  ATGTAGCTCCAACTGTTGAAGAATCGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGTATCTAAAGCTTTAGAATCAAAAATGATGTTACTAATGTTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAATGTACACATTTCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTTAAAGCGAAAAAAATTAGAAAAAAGTTGAAGAAGGTGTTAGTGGTCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTAAAAGATGTTTTATCTAGTGCATTAGGCATGGATGAAGAACAAATGAAAACAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAG
                                                                  ATGTAGATGCAAAAGATCAAAAAACAATAAATACAA---TTGCCGGAAATGCAAATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAACACGTAGACGAAGTAATGAAATATGTTCAAAAAATTTGATAAAGAAGTTTGATAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGTGAAGACAAAGATGAAGTTATAGATTTAATAGTCCAAAAAGAGAAAACGCATTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Plasmodium falciparum"
/mol type="unassigned DNA"
/db xref="raxon.5833"
/noce="K1 Parasite Strain"
                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                   . 5529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:25262747
                                                                                                                                                                 Score 116.2; DB 6;
Pred. No. 4.8e-06;
O; Mismatches 2373;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5529 bp
WO0238176.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA
                                                                                                                                                                                                Length
                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                   67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22-NOV-2002
                                                                                                                                                                   Gaps
   5302
                                                                                                    1000
                                                                                                                                  5185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8927
                                                                  5242
                 Ś
                                                 밁
                                                                          Ś
                                                                                                                밁
                                                                                                                                             Ś
                                                                                                                                                                      밁
                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                       र्
                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     皮
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1061
6320 GAGATTACACGAATTCAATCGGAGTAGGTAGGTTCTGTTTGGTGGTAGGAAATGTAGGAG
                                                                                                                 2012
                                                                                                                                                                                  1955
                                                                                                                                                                                                                                                   1901
                                                                                                                                                                                                                                                                                                                1841
                                                                                                                                                                                                                                                                                                                                                6020
                                                                                                                                                                                                                                                                                                                                                                                 1781
                                                                                                                                                                                                                                                                                                                                                                                                                 5960
                                                                                                                                                                                                                                                                                                                                                                                                                                               1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                      CCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAG
                                                                                                                                                                                                                                                                                                                  GTGTÄGCTGÄÄÄATGTTGÄAGÄÄÄGTGTAGCTGÄÄÄAATGTTGÄÄGÄÄÄÄGTGTÄGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                 GTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                             CCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTTGGTAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA 1420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGAAAAAATATCA
                                                   TTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCG
                                                                                 AAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCTGTAAAATCAG
                                                                                                                                                                                  AAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTGTTGTA----GAAAGTG
                                                                                                                                                                                                               AAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATG
                                                                                                                                                                                                                                                 ATGTTGAAGAAAGTGTAGCT-----GAAAATGTTGAAGAAATCGTAGCTCCAACTGTTG
                                                                                                                                                                                                                                                                                CTAAAGAAGAAACAGATGATTATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                              TCGTAGCTCCAACTGTTGAÄGAÄATCGTAĞCTCCAACTGTTGAÄGAÄÄTTGTÄĞCTCCÄÄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAAT 5839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GC---AAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ÄTGTTGAAGAÄÄGTGTAGCTGAAÄÄTGTTGAÄGÄAAGTGTÄGCTGÄAAAATGTTGÄÄGÄÄÄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAAAAAATAATGGAAATAAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAA
                                                                                                                   TGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTGTAGCTGAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                 1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1120
                    6379
                                                                                   6319
                                                                                                                                                   6259
                                                                                                                                                                                                                  6199
                                                                                                                                                                                                                                                   1954
                                                                                                                                                                                                                                                                                   6139
                                                                                                                                                                                                                                                                                                                  1900
                                                                                                                                                                                                                                                                                                                                                                                                                 6019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5422
                                                                                                                   2071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1240
                                                                                                                                                                                  2011
```

7330 Qy 3151 Db 3211 Qy 7450 Db 3265 Db	7210 Qy 3031 Db 7270 Qy 7270 Db				TTTTGGTAAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTTGCAAATTGGAAATG 6676	2251 QY 6496 Db 2311 QY	TAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTG 2191 Qy 7451 TAGGAGCTTCTTCTGATACCAATATTATAAAAAGAAATACCAAGACAAGA
8328 TICTUTIATION CAGANATION CONTROL OF THE CONTROL		ATG AAT	GCCCTTCTAAAGGAATTGGAAGAGAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGA	02 CAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAAGAATG 7861	TRANGGATGAACCGGTTCAAAAAGAGGTAGAAAAGGAAACTGTTAGTATTATTGAAAAAGAAAAAGAAACTGTTAGTAGAAGAAAAAAAA	GTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTA	1 TAGATATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAG 7510

Ó

음성 음성

밁 á 밁 S 밁 & & 음성 음성 음성 음

8 8 8 8 8 8 8 8 8

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                              RESULT 23
A58932
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                  FEATURES
                                                                                 COMMENT
                                                                                                              JOURNAL
                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                             4992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4512
                                                                                                                                                                                                                                                                                                                                                                              5052
                       Druilhe, P. and Daubersies, P.

MALARIAL PRE-ERYTHROCYTIC STAGE POLYPEPTIDE PATENT: WO 9641877-A 1 27-DEC-1996;

PASTEUR INSTITUT (FR)

Other publication AU 6309696 970109

Other publication FR 2735478 961220.

Location/Qualifiers

1. 6152
                                                                                                                                                                                                                                                            6152 bp
Sequence 1 from Patent W09641877
A58932
                                                                                                                                                                                               unidentified
unidentified
                                                                                                                                                                                                                                               A58932.1
                                                                                                                                                                             unclassified sequences.
                                                                                                                                                                                                                                                                                                                                                                                                  TCAATTAATAACCAAAAAATTCAAAAAAATAATTACTTTAGCATCAA 9274
                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAACACGTAGACGAAGTAATGAAATATGTTCAAAAAATTGATAAAGAAGTTGATAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAATGTACACATTTCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTTAAAGCGAAAAAGAAAATTAGAAAAAAAGTTGAAGAAGGTGTTAGTGGTCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGTGAAGACAAAGATGAAGTTATAGATTTAATAGTCCAAAAAGAGAAAACGCATTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAAGAAGATATAGAAGATAAAGTTGAAGATATAGATGAAGATATAGATGAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAGAAAAAAATAACAAAAAAGAAAGTAAGGTTTGATATTAAGGATAAGGAACCAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTAAAAGATGTTTTATCTAGTGCATTAGGCATGGATGAAGAACAAATGAAAACAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGATATGGATAAGGAAAGTTTAGAAGATGTAACAACAACATTGGAGAAAGAGTTGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTAGATGA-TTTAAAAAGGAAGTATATTAGACATGTTAAAAGGGAGATATGGA--ATTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAACATATAATAAGTGGTGATGCGCATATAAAAGGTTTGGAAGAAGATGATTTAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGC
                                                                                                                                                                                                                                                                                                                                                                            AGTATCTAAAGCTTTAGAATCAAAAAATGATGTTACTAATGTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGGAATGGTATTTCTGTGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCATTAGAAGTTGAAGAAGAAAAAAATTAGAAGAAGTACACGAATTAAAAGAAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. .6152
/organism="unidentified"
                                                                                                                                                                                                                                               GI:3714406
                                                                                                                                                                                                                                                                                             DNA
                                                                                                                                                                                                                                                                                             linear
                                                                                                                             MOLECULES
                                                                                                                                                                                                                                                                                                                                                                            5098
                                                                                                                                                                                                                                                                                             PAT
                                                                                                                                                                                                                                                                                             06-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                           5051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8627
                                            밁
                                                                       Ś
                                                                                                         밁
                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                S
           S
                                                                                                                                       Ş
                                                                                                                                                                         문
                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                   $
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 1.2%;
Best Local Similarity 41.7%;
Matches 1747; Conservative
             6080
                                             1917
                                                                                                            1857
                                                                                                                                                                                                                                          1737
                                                                                                                                                                                                                                                                          5840
                                                                                                                                                                                                                                                                                                          1677
                                                                                                                                                                                                                                                                                                                                         5780
                                                                                                                                                                                                                                                                                                                                                                       1617
                                                                                                                                                                                                                                                                                                                                                                                                         5723
                                                                                                                                                                                                                                                                                                                                                                                                                                          1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5126
                                                                                                                                                                           1797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1017
                                                                                                                                    CCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTG
           AAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATA 6139
                                                                                                                                                                                                                                                                                                                                GAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATAACGATAGCAGAAT
                                            GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                          CTAAAGAAGAAGAAGATGATTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATA 6079
                                                                                                                                                                                                        TAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAA
                                                                                                                                                                                                                                          ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                        TAMATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGG
                                                                                                                                                                                                                                                                                                          GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                       ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAA 1676
                                                                                                                                                                                                                                                                                                                                                                                                  GC---AAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGCTATTGTAAAAAACAGTTAAAATTACAACGGCGAATGATCAAGATAGAAAAAATATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAAACAATCAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGTTGAAGAAAGTATAGCTTCAAGTGTTGATGAAAGTATAGATTCAAGTATTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCA
                                                                                                          GTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAATGTTGAAGAAA 1916
                                                                                                                                                                         TCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGTTGAAGAÄATCGTÄGCTCCAACTGTTGAÄGAAATCGTÄGCTCCAÄCTGTTGAAGAÄA 1556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA 1496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGAAA 5542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGITGAAGAATCGTAGCTCCAACTGTTGAAGAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGTAGATGCAAAAGATCAAAAAACAATAAATACAA---TTGCCGGAAATGCAAATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /mol_type="unassigned DNA"
/db_xref="taxon:32644"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 116.2; DB 6;
Pred. No. 4.6e-06;
0; Mismatches 2373;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 6152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                          1796
                                            1976
                                                                                                                                                                                                                                                                          5899
                                                                                                                                                                                                                                                                                                          1736
                                                                                                                                                                                                                                                                                                                                                                                                                                        1616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1256
                                                                                                                                           6019
                                                                                                                                                                           1856
                                                                                                                                                                                                                                                                                                                                                                                                         5779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14;
```

1977 RIGITIANGANGTORICCTCHANTOTTORACIANTCOTRACTCCARCTOTTE 2030 1101 ANANGGATTICTITACCARTACTCARCTACTARACTCTARACTCCARCTOTTATICCARCTOTTE 2030 2031 MANAGGATTICTTACCARTACTCARCTARACTCCARCTOTTATICCARCTATICTARACTOCARCTOTTATICCARCTOTTATICCARCACARCTOTTATICCARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICCARCACARCTOTTATICARCACARACTOTTAT
B
7211 ATRATTTTGANACAGCCAGNAGNAMAGNACAGANATTACGANATATTGANA 3107 7211 ATRATTTTGANACAGCTGANAGACTAGANAGAACAGAACGANATATTGANA 3107 7211 TANANCTTTAGANANTCAGTTAGANAGATAGANAGAACAGAAC

S В 밁 5

S 뭥 ş 밁 Ś 밁 Ş 밁 δ 밁 8 멍 Ś

8 8 8 B

밁

र्ठ

```
RESULT 24
AR131271
LOCUS
                                                                                                                                                       밁
                                                                                                                                                                             Ş
                                                                                                                                                                                                                당
                                                                                                                                                                                                                                                    중 유
                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                        중 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                            중 음 중 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ર્ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음 성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          중 유
                                                                                     吊
                                                                                                                                                                                         9168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4471
                                                                                     5128
                                                                                                                                                                                                                                                                                             4948
                                                                                                                                                                                                                                                                                                                                                                 4888
                                                                                                                                                                                                                                                                                                                                                                                                                                     4828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4411
   AR131271
                                                                                                                                                                                       GAATGTACACATTTCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTC
                                                                                                                                                                                                                                                         TACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATC
                                                                                                                                                                                                                                                                                                                                                                                          CTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGATATGGATAAGGAAAGTTTAGAAGATGTAACAACAAAACTTGGAGAAAGAGTTGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCATTAGAAGTTGAAGAAGAAAAAAATTAGAAGAAGTACACGAATTAAAAGAAGAGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGATCGAAAAAGTATCTGATTTAAAAGATCTTGAAGAAGATATATTAAAAG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGATTGAATGCAATTTCTAAAGTAGAAGGTTTTGGATGAAGATAAAGTAACTGCTAAATC
                                                                                                       TCAATTAATAACCAAAAATTCAAAAAATAATAATTACTTTAGCATCAA
                                                                                                                                                     AAAACACGTAGACGAAGTAATGAAATATGTTCAAAAATTGATAAAGAAGTTGATAAAGA
                                                                                                                                                                                                                         AAAGAAAAAAATAACAAAAAAGAAAGTAAGGTTTGATATTAAGGATAAGGAACCAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTAAAAGATGTTTTATCTAGTGCATTAGGCATGGATGAAGAACAAATGAAAACAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTAGATGA-TTTAAAAAGGAAGTATATTAGACATGTTAAAAGGGAGATATGGA--ATTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aaaagctttggctaaaaatgaaaattatggaaatgtaaaaggaactggaggagccttagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTCGAAGAAGCTGAAGAATAAAAGATCTTGAAGCAGATATATTAAAAGAAGTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACTATTGAAACAGATATTTTAGAAGAGAAAAAAGAATAGAAAAAGATCATTTTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -- AAGTAAAAGAAATCAAAGAACTTGAAAGTGAAATTTTTAGAAGATTATAAAGAATTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCTGTAGTATCAGGAAATGGAGGAGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGC
                                                                                     AGTATCTAAAGCTTTAGAATCAAAAATGATGTTACTAATGTTTTAA
                                                                                                                                                                                                                                                                                             AGGTGAAGACAAAGATGAAGTTATAGATTTAATAGTCCAAAAAGAGAAACGCATTGAAAA
                                                                                                                                                                                                                                                                                                                             AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATT
                                                                                                                                                                                                                                                                                                                                                                 AGAAGAAGATATAGAAGAAGATAAAGTTGAAGATATAGATGAAGATATAGATGAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAACATATAATAAGTGGTGATGCGCATATAAAAGGTTTGGAAGAAGATGATTTAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTA
   6152
 ģ
 DNA
 linear
                                                                                     5174
 PAT
 16-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                         Ş
                                                                                밁
                                                                                                              Ş
                                                                                                                                                    밁
                                                                                                                                                                           Ş
                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 1747; Conserv
                                                                                                                                                                                                                                                                                                                             5603
                                                                                                                                                                                                                                                                                                                                                               1437
                                                                                                                                                                                                                                                                                                                                                                                               5543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1017
                                                                                                                                                       1617
                                                                                                                                                                                                                                                                                             1497
                                                                                                                                                                                                                                                                                                                                                                                                                                 1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1317
                                                                                                                                                                                                                       1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unclassified.

1 (bases 1 to 6152)

1 (bases 1 to 6152)

Druilhe, P. and Daubersies, P.

Malarial pre-erythrocytic stage polypeptide |

Patent: US 6191270-A 1 20-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1 from AR131271 GI:1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTTGAAGGAGTAAGTTCTTTCA
                                                 TAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGG
                                                                                                              GAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAAT
                                                                                                                                                                                                                                               AAAATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAA
                                                                                                                                                                                                                                                                                                                                                                                        AGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACCTTGAATAAGACAGTTTCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGAAAAAATATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAACAATCAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGTAGATGCAAAAGATCAAAAAACAATAAATACAA---TTGCCGGAAATGCAAATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGTTGAAGAAAGTATAGCTTCAAGTGTTGATGAAAGTATAGATTCAAGTATTGAAGAAA
                   ATGTTGÁAGAAAGTGTAGCTGAAÁATGTTGAAGAAAGTGTAGCTGAÁAATGTTGAAGAAA 1796
                                                                                                                                                       ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAA
                                                                                                                                                                                      GC---AAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAG
                                                                                                                                                                                                                                                                                           ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                           TTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACAC
                                                                                                                                                                                                                                                                                                                                                               GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGITIGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGTÄGCTCCAAGTGTTGTÄGAAAGTGTGGCTCCAAGTGTTGÄAGAAAGTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGITTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ĠTGTTĠAAĠAAĠTĠŤAĠAAĠAAAŦĠŤŤĠAAĠAAĀGTGTAGCŤĠAAAATGTTGAAĠAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAA
                                                                                                                                                                                                                           TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="unknown"
/mol_type="unassigned
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:14119596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 116.2; DB 6;
Pred. No. 4.6e-06;
0; Mismatches 2373;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             molecules
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
```

1376

1316 5422 1256 5362 1076 5185

14;

1496 5602 1436

5899

5839 1676

\$ \$ \$ \$ \$ \$	J	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Q	8 8 8 8 8 8 8 8 8
GAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATTTGCAAATAAGGTAG 6913 TCGAAACTGAGGAAATAAAGGACAGTATATTAAATGATAATAATATTGCAAATAAGGAAATG 6913 TCGAAACTGAGGAAATAAAGGACAGTATATTAAATGAAATGAAAAGGAAAATG 2807 AAACAGATATCGATCATAGAACTTTACACTCTTCTACTGATGTAAATGTAAAAGCTCTTA 6973	6677 CCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGCAGTGGCAGTTACCAAAG 6736	6497 AAGGAATTTCCTCTTTTGGAGTCGAGTCGCAGCAGCCGGGTAGGAGCCGGAGTGGCAG 6556	2208 TAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTG 2267 6380 TAGGAGCTTCTTCTGATACCAATATTATAAAAAGAAATACCAAGAGAGTTGGAA 6436	2031 AAGAAATCGTAGCTCCAACTGTTGAAGAAAATTGTAGCTCCAAGTGTTGTAGAAAGTG 2087 2031 AAGAAATCGTAGCTCCAACTGTTGAAGAAAATTGTAGCTCCAAGTGTTGTAGAAAGTG 2087 Qy 6200 CCGCTGGTTCAGGACAAGCCGGAGGTGGCCAGGAACTGTTAATATCAACAAGGTTTATGGAG 6259 Qy 2088 TGGCTCCAAGTGTTGAAGAAAAGTGTAGAAAAAATGTTGAAAAATGTTAAATGCAAAAATGTTAAATGCAAAAATGTTAAATGCAAAAATGTTAAATCAG 6319 6260 AAAACAGAAAGCTCTTGTAGAAAAATTCTATATTAAATGCAAAAACATTATTCTGTAAAATCAG 6319 2148 TTGAAGAAAAGTGTAGCTGAAAAATGTTGAAGAAAATGTTGAAAAATGTTGAAGAAATGTTGAAGAA	5900 TAATTGCTAATTATGCAAGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAA 5959
Qy 7922 GCCCTTCTAAAGGAATTGGAAGAATCAATGTCAAAGTGAAAAAGAAAACAGAGTGA 7981	3642 7802 3702 3762	3462 7626 3522 7682 3582	7451 TAGATATTACAACAGAGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAG	3108 ATTIKGAAGATGAAATGCGAAGTAAAGAACAAGAACAAAATGTTAAAAAAGTTAAAAAGTTAAAAAAGTAAAAAAGTAAAAAA	

```
4471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4411
                                                                                                                                                                                                                                                                                                                           CTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACAATTTCAGGGGAAACAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACAAAAAATATTTTCAGAAGTCAATGCTCTTTGCTTTAAATGATACAAAGAATGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACTATTGAAACAGATATTTTAGAAGAGAAAAAAGAAATAGAAAAAGATCATTTTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAACATGATATAACGACGACGTTGGATGAAGTTGTAGAATTAAAAGATGTCGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGAAGTATTTTTCATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAAC
GGTTAAAGCGAAAAAAGAAAAATTAGAAAAAAAAGTTGAAGAAGGTGTTAGTGGTCTTAA
                                                                 TACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATC
                                                                                                                                                                                                 AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATT
                                                                                                                                                                                                                                                                   AGAAGAAGATATAGAAGATAAAGTTGAAGATATAGATGAAGATATAGATGAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                       AAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAGAAAAAATAACAAAAAAGAAAGTAAGGTTTGATATTAAGGATAAGGAACCAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTAAAAGATGTTTTATCTAGTGCATTAGGCATGGATGAAGAACAAATGAAAACAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGATATGGATAAGGAAAGTTTAGAAGATGTAACAACAAAACTTGGAGAAAGAGTTGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTAGATGA-TTTAAAAGGAAGTATATTAGACATGTTAAAGGGAGATATGGA--ATTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAACATATAATAAGTGGTGATGCGCATATAAAAGGTTTGGAAGAAGATGATTTAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCATTAGAAGTTGAAGAAGAAAAAATTAGAAGAAGTACACGAATTAAAAGAAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTCGAAGAAGCTGAAGAAATAAAAGATCTTGAAGCAGATATTTAAAAGAAGTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -- AAGTAAAAGAAATCAAAGAACTTGAAAGTGAAATTTTAGAAGATTATAAAGAATTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCTGTAGTATCAGGAAATGGAGGAGGAGTAATTGCCGGAGCAGGAGTGAATACTTCTACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAGATTCTAAAGAATAATAGATGCAAAAGATGATACATTAGAAAAAGTTATTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGTTGAAATAAATGACATTACTAGCAAACTTATTGAAGAAACTCAAGAGTTAAATGAAG
                                                                                                                                   AGGTGAAGACAAAGATGAAGTTATAGATTTAATAGTCCAAAAAGAGAAACGCATTGAAAA
                                                                 9167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4059
```

8 밁 á 밁 Ś 밁 Ś 밁 ફ 밁 Ş 밁 δ 멍 Ş 밁 Ş В S 밁 ક 밁 Ş 밁 S 밁 Ş 밁 ş 밁 Ş B S 밁 ঠ

REFERENCE

```
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 25
AC164627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FOCA?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                Arredonch, H. Beiwallo, K., Blyth, P., Bentran, B., Beitran, R., Beraducci, A., Biswallo, K., Blyth, P., Bonham, H., Bahay, C., Burch, P., Cadoree, I., Canada, A., Cardenas, V., Catter, K., Cavaros, I., Checko, J., Chahrour, M., Chavez, D., Chen, A., Chen, G., Chen, R., Chen, M., Davida, C., Degado, O., Denson, S., Deramo, C., Dling, Y., Dhih, H., Donlin, J., McCauley, S., Dugan-Rocha, S., Dunn, A., Durbin, K., Dziuda, D., Egan, A., Bacotto, M., Bepinosa, V., Eugene, C., Pa, M., Pernandez, S., Fernando, P., Flagg, N., Forbes, L., Foster, P., Gonzalez, G., Chen, G., Chen, G., Chen, G., Chen, R., Chen, G., Chen, R., Chen, G., Chen, R., Chen, G., Chen, G., Chen, R., Chen, R., Chen, G., Chen, R., Chen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AC164627
AC164627.4
HTG.
Direct Submission
Submitted (25-JUN-2005) Human Genome Sequencing Center, Be
College of Medicine, One Baylor Plaza, Houston, TX 77030,
3 (bases 1 to 192275)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus (house mouse)
Mus musculus
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Eut.
Mammalia, Eutheria, Euarchontoglires, Glires, Rodentia,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AC164627 192275 bp DNA linear ROI
Mus musculus 10 BAC RP23-382A18 (Roswell Park Cancer In
(C57BL/6U Female) Mouse BAC Library) complete sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 (bases 1 to 19275)
Muzny,D., Adams,C., Agbai II,O., Allen,C., Alsbrooks,S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sciurognathi; Muroidea; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAATTAATAACCAAAAATTCAAAAAAATAATATTACTTTAGCATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAATGTACACATTTCCAATGAGATGGATATTAAAAATTTTGGCAAAGCAGTATGCATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAACACGTAGACGAAGTAATGAAATÁTGTTCAAAAATTGATAAAGAAGTTGATAAAGA 5127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ROD 27-JUL-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Euteleostomi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ., Archer, P., Beltran, R.,
                                                                    Baylor
```

```
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
repeat_region
                                                                        repeat_region
                                                                                                        repeat_region
                                                                                                                                                repeat_region
                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Worley, K.C.
Direct Submission
Submitted (25-JUL-2005) Human Genome Sequencing Center, Baylor
College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
4 (bases 1 to 192275)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (27-JUL-2005) Human Genome Sequencing Center, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA On Jul 27, 2005 this sequence version replaced gi:71069494. Sequencing is completed to a minimum standard of double strand coverage with a minimum of 2 clones and 2 reads with no ambiguities or 2 chemistries with a minimum of 2 clones and 3 reads with no ambiguities. If the sequence quality does not meet this standard, it will be indicated in the annotation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Exon/Intron boundaries of identified genes were chosen if there were canonical splice junctions that maintained sequence continuity across the splice junctions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence similarities were identified using Powerblast by Jinghui Zhang.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The repeat regions shown were identified using RepeatMasker by
Adrian Smit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Worley, K.C.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Web site: http://www.hgsc.bcm.tmc.edu/
Drafting Center Code: BCM
Contact: hgsc-help@bcm.tmc.edu.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Center: Baylor College of Medicine Center code: BCM
                                       /rpt
                                                                          /rpt_7402.
                                                                                                              /rpt
7219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /rpt_family="L1MA4"
complement(2801. .30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /rpt
                                                                                                                                                                                                                                                                                                               ğ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /mol_type="genomic DNA"
/db_xref="taxon:10090"
/chromosome="10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     organism="Mus musculus"
                                                                                                                                                                   1gr
                                                                                                                                                                                                                                                                                                                                                     뒃
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               clone="RP23-382A18"
                                                                                                                                                                                                                                                                                            t family="L1 Mus4"
plement(4207. .4333)
t family="B1 Mur1"
plement(4475. .4800)
                                                                                                                                                                                                                                                                    _family="L1MC4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                        _family="L1_Mus4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         __family="L1Md_F3"
._.3106
                                                                                                                                                                                                                                                                                                                                                                                  _family="L1_Mus4"
                                                                                                                                                                                                                                                                                                                                                                                                                      _family="82_Mm1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _family="L1Md_F3"
                                                                                     _family="MT2A"
                                                                                                                   _family="B1_Mur3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _family="L1_Mm"
                  _family="ID4"
                                                     _family="MT2B2"
                                                                                                                                                                                                     family="PB1D9"
                                                                                                                                                                 family="(GA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                           .3454
                    ঠ
                                                          Best Local Similarity Matches 1153; Conserv
```

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                    repeat_region
                                                                                                   repeat_region
                                                                                                                             repeat_region
                                                                                                                                                      repeat_region
                                                                                                                                                                                repeat_region
                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
1.2%;
ilarity 41.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement (9153...927 /rpt_family="B1_Mur1" 9764...9791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_famil
8526. .858
                                                                                                             /rpt_family="LIMd_F2"
complement(26473. . . 26801)
/rpt_family="Lx"
                                                                                                                                                                                                                                                                                                                                           complement (17709. .17829)
/rpt family="B1 Mur2"
complement (17945. .18040)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rpt_family="81_Mus1"
8474. .8502
                                                     /rpt_family="(TTTG)n"
complement(27768. .27893)
                                                                                                                                                                                                                                                                                                                                                                     /rpt_family="81_Mus1"
complement(17709. .17)
                                                                                                                                                                                                                                                                                                                                                                                                                                                   /rpt_family="(CAG)n"
14549. .16252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /rpt_family="(CAG)n"
13539. .14083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /rpt_1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /rpt_family="(CAAAC)n"
8503. .8523
                                                                                                                                                                                   /rpt_family="(TCTG)n"
21924. .21950
                                                                                                                                                            complement (23702
                                                                                                                                                                                                                                        complement (19766.
                                                                                                                                                                                                                                                   /rpt
                                                                                                                                                                                                                                                                                                                   /rpt_family="RSINE1"
19007. .19222
                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="MusHAL1"
|6253. .16751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_1
12689
                                                                                                                                                                        햠
                                                                                                                                                                                                                                                                                           /rpt_family="(CAG)n"
19451. .19510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /rpt_tamily="
|3319. .13503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'rpt_family="(CAG)n"
|2090. .12272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rpt_family="AT_rich"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      family="(GAAA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _family="(CAG)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 _family="(CAG)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           family="(CAG)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _family="(CAG)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _family="(CAG)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                family="(CAG)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _family="(CAG)n"
                                                                                                                                                                                                                                                   family="(TA)n"
                                                                                                                                                                                                                                                                             _family="CT-rich"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _family="(CAG)ກ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       family="(CAG)n"
                                                                                             family="CT-rich"
                                                                                                                                                                                                                           _family="MT2A"
                                                                                                                                                                                                                                                                                                                                                                                                               family="MusHALl"
                                                                                                                                                                     family="AT_rich"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .11678
                                                                                                                                                                                                                                                                                         19510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ly="81_Mus1"
 Score 113.8; DB 9;
Pred. No. 2.6e-06;
0; Mismatches 1617;
                                                                                                                                                                                                                                        .20147)
                                                                                                                                                            24290)
                           Length 192275;
```

5610 AGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACACAAAATAC 5669

0

Indels

19; Gaps

S

	•	•		•	•	•		•		•	•	•	•	•	•		- , -
	6624 AAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGT 6683	6564 TTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAAGAATTTTGGT 6623		6450 TGATGAAGGTTTCGGAGAAGCTGAAATTACAGCAGGATTCTAAGCAAGGAATTTCCTC 6509	6390 TTCTGATACCAATATTATAAAAAGAAATACCAAGACAAGTTTGGAAAAACTACAATGTC 6449	6330 GAATTCAATCGGAGTAGGTAGGTTCTGTTGGTGGTGGTAGAATGTAGGAGTAGGAGCTTC 6389	6270 TCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACAC 6329	6210 AGGACAAGCCGGAGTGGCAAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGC 6269	6150 TGTTACCAATAGTTCAGCTACTCATACTTTAAAAATCTTTATTGGCAAATGCCGCTGGTTC 6209	6090 AAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAAAATAAGTAATAAAAAAGGATT 6149	6030 AACAGATGATTATTACTTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAA 6089	5970 TGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGA 6029	5910 TTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAA 5969	5850 AAAAATCACTGCGAAGGAAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAA 5909	5790 GACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATAGCAGGATAGCAGGAATTAAATCATGC 5849	5730 TCATTCATCTATTAAAACAATTGGAACTTGGAGCTGGAGTTGGAGCTGGAGT 5789	11197 AGGAGCAGGAGCAGGAGCAGCAGCAGCAGGAGCAGGAGCAGGAGCAAGAGCAAGAGCAAGG 11256 5670 TTCTGCACATATAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAAGCAAATC 5729
g dy	B &	g Q	당 왕	B 8	B &	B 8	B 5	d dd	P 6	p 64	Db 49	₽ Q	d Q	D 59	?	S B 5	S B &
7764 TGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGC 7823	7704 TTCTAATGGAAGATCAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGA 7763 	AACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAA	TTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTT	7524 RTCAGGAACAGTIGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTC 7583	AGAGGACAAGAATAATATCACTTCTACTGGTGGTGTTTGGGAACTGCAGGTCTTGCTTCCGC	7404 AGGAATTAAAGCCATTGTGAAAGACTTCTGATATTATTGGAAAAATGTAGATATTACAAC 7483 	AGCAGGTATTTCTACAGAGATACTTCTGTAAAGCGGATAGAGAGATACTCAGGAGA	CGAAGTTAACAAAGAACAAGATAAAAAAGTAAATGATGCTACCAAAAAAAA	ACTGTAGAAGATAGAAAATTCTGAAGGAACAGAACAGAA	AAATGCAGGAATCGGAGGAGCAGTCGGAGCCAATCTCTTGGTAAATAATTTTTGGAAC AAATGCAGGAGCAGCAGCCAATCCGGAGCCAATGTCTTGGTAAATAATTTTTGGAAC AGCAGGAGGAGCAGCAGCAGCAGGAGCAGGAGCAGAAAAATAATCAGCAGGAGGCAGGAGCAGGAGCAGAAAAATAATCAGCAGGAGCA	GTACGRIGARAMAGITARATITARATITARAGGAGCAGGAGGAGCAGGAGCAGCAGCAGCAGCAGGAGGA	TGTTAACACTATAAATAGTTCTGGATAGCTCGAGTTCACAATAACTCTGATTTGACTTCTGATAGCTCTGATTTGACTTCTGATAGCTCTGATTTGACTTCTGATTTGACTTCTGATTTGACTTCTGATTTGACTTCTGATTTGACTACAACAGCTGGATGAGAGCAGGAGGAACAGGAGGAACAGGAGGAACAGGAGGA	GATTCCTTGACAGCCGGTGGAGGAGGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTGCTGAGTAGTTACCGGAGTGGTTTGCAGCAGTTACCGGAGTGGTTGCAGCAGTTACCGGAGTTACCGGAGTTACCGGTTACCGGTTACCGGTTACCGGTTACCGGTTACCGGTTACCGGTTACCGGTTACCAGCAGTTACCGGTACGGTTACCGGTTACCGGTTACCGGTTACCGGTTACCGGTTACCGGTTACCGGTTACCGGTTACC	GATCATAGIACTETTACACTCTTCTACTGETAAATGTAAAAGTATAAAATTTC	AGCCGARTAICTGGAGTGCTTTCTGTCARTAINTTGCARATANGGTAGGTAGAACAGCAACAAGC AACAGGAGCAGCAGGTCCAGCAGGTCCAGCAGCAGCAACAACAGGAACAAGCAGCAACAAGC AACAGGAGCAGCAGCAGCAGCAGCAGCAGCAACAACAGGAACAGCAACAGC	ACCOCOLOGIA CONTROLOGIA CONTRO	6744 AAACACGAGAGCAAGAGTGAAAAATTCTAAAATTATGACTCGAAACAAGTTAGATGTAAT 6803

 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B
 S
 B

밁 ঠ 밁 S

```
RESULT 26
AC164629/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13824
Nuzny, D., Adams, C., Agbai II, O., Allen, C., Alsbrooks, S., Archer, P., Arredondo, H., Bandaranaike, D., Bangura, L., Beltran, B., Beltran, R., Bertaducci, A., Biswalo, K., Blyth, P., Bonham, H., Buhay, C., Burch, P., Cadoree, I., Canada, A., Cardenas, V., Carter, K., Cavazos, I., Chacko, J., Chahrour, M., Chavez, D., Chen, A., Chen, G., Chen, R., Cheng, M.-T., Chu, J., Clerc, K., Cockrell, R., Coyle, M., Cree, A., Curry, S., Dai, W., Davila, M.L., Davis, C., Davy-Carroll, L., De Anda, C., Delgado, O., Denson, S., Deramo, C., Ding, Y., Dinh, H., Donlin, J., McCauley, S., Dugan-Rocha, S., Dunn, A., Durbin, K., Dziuda, D., Egan, A., Escotto, M. Espinosa, V., Eugene, C., Fa, M., Fernandez, S., Fernando, P., Flagg, N., Forbes, L., Foster, P., Fawler, G., Fu, Q., Fuh, E., Garcia, R., Garcia, R., Garner, T., Gaskin, C., Gench, S., Ghose, S., Gill, R., Gonzalez, D., Garcia, R., Havlak, P., Hanes, A., Hawkins, E., Hayes, S., Hemphill, L., Hernandez, J., Hitchens, M., Hodgson, A., Hogues, M., Hollins, B., Hawkins, E., Hayes, S., Hemphill, L., Hernandez, J., Hong, S., Hum, J., Imo, K., Jackson, A., Jackson, L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pieces.
AC164629.3 GI:70912408
AC164629.3 GI:70912408
HTG; HTGS PHASE1; HTGS DRAFT; HTGS_FULLTOP; HTGS_ACTIVEFIN
Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC164629 203395 |
Mus musculus clone RP23-16N3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

1 (bases 1 to 203395)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGA 8243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGA 8123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTA 8063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAG 7943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGTGCAGCAACCAGAGCAGCAGCATGAGCAGCAGGAGCAGGAGCAGCAACAGCAAA 13469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAAATTCAGAGGTTGAAAT 7883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCAGGAGTGAATACTTCTACAGCACAAA 8392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGA 8303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCAGCAACATCAACCTGAGCAGCAGCAGCAGCTGCTGCAGCAGCAACCAGAGCAGCAGCAGC 13823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCAGCAGGAGCAGTGGTAACAACAGCAG------CAGGAGCAACAGGAGAAACAGCAGG 1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGG 8183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCAACGTGAGCAGCAGCAGGAACAGCAGCAGCAGCAGCAGCAGCAAAAATATCAGC 13589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGAGCAGCAGCAGCAGCAACAAAAA 13972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bp DNA linear nis i/-uu--vo, WORKING DRAFT SEQUENCE, 8 unordered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HTG 17-JUL-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8003
```

Ś 망

밁 ঠ 밁

S

망 ঠ 밁 S 밁 á 밁 Ś

ঠ

```
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Jacob, L., Jiang, H., Johnson, B., Johnson, R., Kalafus, K., Kelly, S., Keys, T., Khan, Z., King, L., Koyas, C., Koyas, A., Kowis, C., Lara, F., Leal, S., Lee, S., Ledall, F. I., Lemon, S., Lewis, C., Lara, F., Li, Y., Li, Z., Linnell, M., Liu, W., Liu, Y.-S., Liu, Y., Liyanage, D., London, P., Lopez, J., Lorensuhewa, L., Lozado, R., Luk, T., Madu, R., Maheshwari, M., Mahoney, C., Malloy, K., Mansouri, D., Martinez, E., McClelland, H., McPherson, J., Mercadao, C., Metzker, M., Malosavljevic, A., Minja, E., Morgan, M., Morris, S., Munidasa, M., Milosavljevic, A., Minja, E., Morgan, M., Morris, S., Munidasa, M., Milosavljevic, A., Minja, E., Morgan, M., Morris, S., Munidasa, M., Milosavljevic, A., Maokelemeh, O., Obregon, M., Ochi-Okorie, C., Odeh, E., Nott, A., Nwackelemeh, O., Obregon, M., Ochi-Okorie, C., Odeh, E., Patel, J., Pauzo, M., Qin, X., Quinn, A., Quiroz, J., Patel, B., Patel, J., Pauzo, M., Qin, X., Quinn, A., Quiroz, J., Patel, B., Patel, J., Santos, J., Santos, R., Savery, G., Scherer, S., Shen, Y., Santibanez, J., Santos, R., Savery, G., Scherer, S., Shen, Y., Santoshanez, J., Santos, R., Savery, G., Scherer, S., Shen, Y., Satek, A., Taylor, E., Thomas, N., Thorn, R., Thornton, R., Trejos, Z., Ugmani, K., Vargo, C., Verduzco, D., Villasana, D., Virk, D., Volkov, A., Waldron, L., Walker, B., Wang, Q., Wang, S., Warren, J., Wu, J., Yakub, S., Yan, K., Yuan, Y., Yu, F., Zhang, J., Zhang, L., Minjahet, Submission

and Janes G., Jan, K., Yuan, Y., Yu, F., Zhang, J., Zhang, L., Weinstock, G. and Gibbs, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (25-JUN-2005) Human Genome Sequencing Center, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA 3 (bases 1 to 203395)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (17-JUL-2005) Human Genome Sequencing Center, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA On Jul 17, 2005 this sequence version replaced gi:68300450.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Worley, K.C.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                           * NOTE: Estimated insert size may differ from sequence length

* (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).

* NOTE: This is a 'working draft' sequence. It currently

* Consists of 8 contigs. The true order of the pieces

* is not known and their order in this sequence record is

* arbitrary. Gaps between the contigs are represented as

* runs of N, but the exact sizes of the gaps are unknown.

* This record will be updated with the finished sequence

* as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                    as soon as it
be preserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 203395)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequencing vector: Plasmid;
Chemistry: Dye-terminator Big Dye: 100% of reads
Chemistry: Dye-terminator Big Dye: 100% of reads
Assembly program: Phrap; version 0.990329
Consensus quality: 201667 bases at least Q40
Consensus quality: 202660 bases at least Q30
Consensus quality: 203356 bases at least Q20
Estimated insert size: 203306; sum-of-contigs estimation
Quality coverage: 11x in Q20 bases; sum-of-contigs estimation
                                                                                                             53146
53246
159348
159448
162069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Center project name: MCNL
Center clone name: RP23-16N3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Web site: http://www.hgsc.bcm.tmc.edu/Contact: hgsc-help.tmc.edu
Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Center: Baylor College of Medicine Center code: BCM
                                          162169
166875
53145: contig of 53145 bp in length
53245: gap of unknown length
159347: contig of 106102 bp in length
159447: gap of unknown length
162068: contig of 2621 bp in length
162168: gap of unknown length
166974: contig of 4706 bp in length
170586: contig of 3612 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genome Center
```

COMMENT

```
S
                                                                                                  밁
                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
 ঠ
                                  밁
                                                                                                                               Š
                                                                                                                                                                   밁
                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 1153; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5610 AGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACACAAAATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCAGCAGCAGCAGCAGGAGGAACAGTOGTAACAACAGCAGCAGCAGCAACCAGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGTCCAGCAGGTCCAGCAGGTCCAGCAGCAGCAGCAACAGGAGCAGCAGCAACAGCA--
                                                                                                                                  AAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAGGATT
                                                                                                                                                                   AACAGATGATTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAA
                                                                                                                                                                                                                                                                  TGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGA 6029
                                                                                                                                                                                                                                                                                                    ттатосаодаасаотстодаотоссотосаосаота тасовосства селототова
                                                                                                                                                                                                                                                                                                                                                                   AACAGGAGCAGCAGCAACAGGAGCAGCAGCAGTAACAGGAGCAGCAGGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGGTGGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAAGCAAATC
 AGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGC
                                                                                                                                                                                                                                   TGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTC
                                -GAAGCAACAGGAGGAGCAGGAGGAACAGTGGTAACAACAGCAGCAGCAGCAACCAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          170587
170687
176966
177066
187043
187143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.2%;
ilarity 41.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     170686: gap of unknown length
176965: contig of 6279 bp in length
177065: gap of unknown length
177065: gap of unknown length
187042: contig of 9977 bp in length
187142: gap of unknown length
203395: contig of 16253 bp in length
13 203395: contig of 16253 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          53146. .53245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /estimated
162069. .16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /estimated_length=unknown
176966. .177065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       estimated_length=unknown
170587. .170686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     estimated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       estimated_length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Mus musculus"
/mol_type="genomic DNA"
/db_xref="taxon:10090"
/clone="RP23-16N3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    estimated_length=unknown/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    escimated length=unknown
.87043. .187142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .66875. .166974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .203395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 113.8; DB 14; Length 203395;
Pred. No. 2.6e-06;
0; Mismatches 1617; Indels 19; G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bp in length
 6269
                                                                   6209
                                                                                                                                                                                                                                                                                                                                                                                                                                    13750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     137623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       137683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     137563
                                  137146
               ঠ
                                                 밁
                                                                          ঠ
                                                                                                                밁
                                                                                                                                         S
                                                                                                                                                                        밁
                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        뭉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        137145
                                                                                                                                                                                   136246
                                                                                                                                                                                                                                                                                                                                                                                    136426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCAGCAGGAGCAGGAGGAACAGTGGTAACAACAGCAGCAGCAGCAACCAGAGCAGC
                 CGAAGTTAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATC
                                                                                                                                           AAATGCAGGAATCGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ANACACGAGAGCAAGAGTGAAAAATTCTAAAATTATGACTCGAAACAAGTTAGATGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAATTCAATCGGAGTAGTAGGTTCTGTTTGGTGTTGGTGGAAATGTAGGAGTAGGAGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCAGGAGCAGCAACAGGAGCAGCAGGTCCAGCAGGTCCAGCAGCAGCAGCAACAGG
                                                                                                                                                                                   CGTACGAGAAAAAGTAAATGTAACGGCAAAAGAGAGAAAAAAATATTAAGCAAACAGCAGC
                                                                                                                                                                                                                                                    TGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTC
                                                                                                                                                                                                                                                                                                                      GGCAGCAGGAGCAGCAGCAACAGGAGCAGCAGGTCCAGCAGGTCCAGCAGCAGCAGCAGCAAC
                                                                                                                                                                                                                                                                                                                                              GAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTC
                                                                                                                                                                                                                                                                                                                                                                                    AGAAGCAACAGGAGCAGCAGGAGGAACAGTGGTAACAACAGCAGCAGCAGCAACCAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                   CGATCATAGTACTTTACACTCTTCTACTGATGTAAATGTAAAAGCTCTTAATAAAATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACAGGAGCAGCAGGTCCAGCAGGTCCAGCAGCAGCAGCAACAGGAGCAGCAGCAACAGC 136427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTGGAATTCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCÁGCAGGTCCÁGCAGCAGCAGCAÁCAGGÁGCAGCAGCAGCAGAAGCÁACAGGGGGGA 13660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AÁCAÁCAGCAGCAGCAACCAGÁGCAGCAGCAGGAGCAGCAGCAACAGGAGCAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTTGGAGTCGGAGTCGCAGCAGCCGGGGTAGGAGC-----CGGAGTGGCAGGAACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCAGCAACCAGAGCAGCAGCAGGAGCAGCAGGAGGAACAGTGGTAACAACAGCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCTGATACCAATATTATAAAAAGAAATACCAAGACAAGAGTTGGAAAAACTACAATGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACAC
                                                AGCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGA 7283
                                                                                                                   AGCAGGÁGGÁGCAGCÁGCÁTGÁGCÁGCAGGÁGCAGGAGCAGCAAAAÁTATCAGCAGGÁGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATTGCAAATAAGGTAGAAACAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAAGCAAAGATTTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>AGCAGCÁGCAACÁGTÁGAÁGCAACAGGGGGÁGCAGGAGGÁÁCAGTGGTÁACÁACÁGCAGC</u>
7343
                                                                                                                                                                                                                                                                                     7103
                                                                                                                                                                                                                                                                                                                                                      7043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6449
                                                                                                                                                                                                                                                                                                                                                                                    136367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       136487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        136666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      136786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       136846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13702
                                                                                                                                                                                    136187
                                                                                                                                                                                                                                                    136247
                                                                                                                                                                                                                                                                                                                    136307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          137086
```

B

Ś

중 음 중 음

음 성

중 유

문

```
135409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 135469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    136066 AACAGCAACCTGAGCAGCAGCAGGTGCAGCAGCAGCAGCAACCAGAGCAGCAGCATGAGC 136007
134995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTAGGAGCAGTAGCAGGGGGGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTT 7643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGAGCAGCAGAAAGAGCAGAATCAACAGGAGGAGCAGCAGGAGCAGTGGTAACAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAGGACAAGAATAATATCACTTCTACTGGTGGTTTTGGGAACTGCAGGTCTTGCTTCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCAGCAGCATGAGCAGTAGCAAAAATATCAGCAGAAGCAACAGGAGCAGCAGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGA 7403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAAATCAATGTCAAAGTGGAAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAATTCAGAGGTTGAAAT 7883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTTATTGTAMAAGATAMATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAAC
                                                                                                                                                                                                                                                                                                                                           GGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCAACGTGAGCAGCAGCAGCAACAGCAGCATGAGCAGCAGCAGCAAAAATATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGTGCAGCAGCAACCAGAGCAGCAGCATGAGCAGCAGGAGCAGGAGCAGCAACAGCAAA 135470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGAGGAGCAGGAGCAGTGGTAACAACAGCAGCAGCAGCAACCAGAGCAGCAGCAGA 135590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCAGGAGCAGCAGGTCCAGCAGCAGCAGCAACAGGAGCAGCAGCAACAGCAGAAGCAAC 135650
                                                                                                                                                                                                  TGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCCGG 8363
                                                                                                                                                                                                                                                                              AGCAGCAACATCAACCTGAGCAGCAGCAGGTGCTGCAGCAGCAACCAGAGCAGCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCAGCAGGAGCAGTGGTAACAACAGCAG-----CAGGAGCAACAGGAGAAAACAGCAGG
AGGAGCAGCAGCAGCAGCAACAAAAA 134967
                                                             AGCAGGAGTGAATACTTCTACAGCACAAA 8392
                                                                                                                                     7823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  135947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            135176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     135410
```

δ

유 상 유 상 유 상 유

음 성 음 성

음 성 음

8 8 8 8 8 8 8 8 8 8 8

```
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 27
AC153503/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POCUS
                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                 JOURNAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEZNY, D., Adams, C., Agbal 1., O., Allen, C., Albertooks, S., Arcieri, F., Arredondo, H., Bandaranaike, D., Bangura, L., Beltran, B., Beltran, C., Cohen, G., Chen, G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AC153503 203787 bp Mus musculus clone RP23-107G22,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 (bases 1 to 203787)
Muzny,D., Adams,C., Agbai II,O., Allen,C., Alsbrooks,S.,
                                                          Submitted (05-JUN-2005) Human Genome Sequencing Center, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA On Jun 5, 2005 this sequence version replaced g1:66954712.
                                                                                                                                                                                                                          Submitted (14-DEC-2004) Human Genome Sequencing College of Medicine, One Baylor Plaza, Houston, (bases 1 to 203787)
                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                         Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mammalia; Eutheria; Euarchontoglires; Glires;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          htg; htgs_phase1; htgs_draft; htgs_fulltop; htgs_activefin
                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                       Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 203787)
Center: Baylor College
                                  ----- Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:66955894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA linear HTG
WORKING DRAFT SEQUENCE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  05-JUN-2005
6 unordered
```

```
S
                                                                                                                          밁
                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                         र्
                                                                                                                                                                                                                                                                                                                                                                               ₽
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 41.3
Matches 1153; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bource
                                                                                                                       137378 AGGAGCAGCAGCAGTAGCAACAGGAGCAGCAGTAACAGGAGCAGCAGGAGCAGGAGGTCC 137319
                                                        5790 GACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGC 5849
                                                                                                                                                                                                                                                                                                                                                                                                                                           5610 AGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACACAAAATAC 5669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NOTE: Estimated insert size may differ from sequence length
(see http://www.hgsc.bcm.tmc.edu/docs/Genbank draft data.html).

NOTE: This is a "working draft' sequence. It currently
consists of 6 contigs. The true order of the pieces
is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
AGCAGCAGCAGCAGCAGGAGGAACAGTGGTAACAACAGCAGCAGCAGCAACCAGAGCAGC 137259
                                                                                                                                                                        TCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGGAGT
                                                                                                                                                                                                                                                    TTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAAGCAAATC
                                                                                                                                                                                                                                                                                                                                                                               Sequencing vector: Plasmid;
Chemistry: Dye-terminator Big Dye: 100% of reads
Assembly program: Phrap; version 0.990329
Consensus quality: 202447 bases at least Q40
Consensus quality: 202943 bases at least Q20
Consensus quality: 20311 bases at least Q20
Consensus quality: 20311 bases at least Q20
Betimated insert size: 209539; sum-of-contigs estimation
Quality coverage: 17x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31138
31238
46216
46316
158926
159026
161137
161237
179916
180016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center project name: MBWB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Center clone name: RP23-107G22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: hgsc-help.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             site: http://www.hgsc.bcm.tmc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /estimated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonstated_lemonst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /estimated_length=unknown
179916. .180015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31138. .31237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /mol_type="genomic DNA"
/db_xref="taxon:10090"
/clone="RP23-107G22"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .203787
/organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        estimated_length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /estimated_length=unknown
|61137. .161236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  estimated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31137: contig of 31137 bp in length
31237; gap of unknown length
46215: contig of 14978 bp in length
46315: gap of unknown length
158925: contig of 112610 bp in length
159025: gap of unknown length
161136: contig of 2111 bp in length
161216: gap of unknown length
161216: gap of unknown length
179915: contig of 18679 bp in length
180015: gap of unknown length
203787: contig of 23772 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 113.8; DB 14; Length 203787; 
Pred. No. 2.6e-06; 
0; Mismatches 1617; Indels 19; G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .edu/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19; Gaps
                                                                                                                                                                                                                                                                                                                                                                               137439
                                                                                                                                                                                                                                                                                                                5729
                                                                                                                                                                                                                                                 137379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                        S
                                                                                                                                                    밁
                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           136901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           136481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTGGCAGTTACCAAAAGATGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAA 5909
                                                                                                                                                                                                                                                                                  AGCAGCAGCAACAGTAGAAGCAACAGGGGGGAGCAGGAGGAACAGTGGTAACAACAGCAGC 13672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGTCCAGCAGGTCCAGCAGCAGCAGCAGCAGCAACAGGAGCAGCAGCAACAGCA-- 136961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGTAGTAGCAACAGGAGCAGCAGCAACAGGAGCAGCAGGAGCAGGTCCAGCAGCAGC 137139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACAGGAGCAGCAGCAGCAACAGGAGCAGCAGCAGCAGTAACAGGAGCAGCAGCAGCAGC 137199

        ACAGGAGCAGCAGGTCCAGGTCCAGCAGCAGCAGCACAGGAGCAGCAGCAACAGC
        136183

                                                                                      AGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATTGCAAATAAGGTAGAAACAGATAT 6923
                                                                                                                                                                                                                   AGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTGGAATTCTTGC 6863
                                                                                                                                                                                                                                                                                                                                                 AAACACGAGAGCAAGAGTGAAAAATTCTAAAATTATGACTCGAAACAAGTTAGATGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                   TCCAGCAGGTCCAGCAGCAGCAGCAGGAGCAGCAGCACACAGAAGCAACAGAGGGGGA 13636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGT 6683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCAGCAACCAGAGCAGCAGCAGGAGCAGCAGGAGGAACAGTGGTAACAACAGCAGCAGCAGC 136662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCTGATACCAATATTATAAAAAGAAATACCAAGACAAGAGTTGGAAAAACTACAATGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAATTCAATCGGAGTAGTAGGTTCTGTTGGTGGTGGGAAATGTAGGAGTAGGAGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACAC 6329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCAGCAGGAGCAGCAGGAGGAACAGTGGTAACAACAGCAGCAGCAGCAACCAGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGC 6269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTC 6209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAATAAGTAATAAAAAAAGGATT 6149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACAGATGATTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAA 6089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGA 6029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAA 5969
                                                                                                                                                        TTTTGGAGTCGGAGTCGCAGCCGGGGTAGGAGC-----CGGAGTGGCAGGAACCGT 6563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -GAAGCAACAGGAGGAGGAAGGAACAGTGGTAACAACAGCAGCAGCAGCAACCAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6449
                                                                                                                                                        136243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              136422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        136482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        136902
```

8 8 8 8 8

음 성 음

ર્

```
136062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         135522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        135762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         135822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          135882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          136002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAAGCAACAGGAGCAGCAGGAAGGAACAGTGGTAACAACAGCAGCAGCAGCAACCAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGATCATAGTACTTTACACTCTTCTACTGATGTAAATGTAAAAGCTCTTAATAAAATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACAGCAACCTGAGCAGCAGCAGGTGCAGCAGCAGCAACCAGAGCAGCAGCATGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAATGCAGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGAGCAGCAGCAACAGCAGCAACAGGAGGAGCAGGAGCAACAGTGGTAACAACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTC
                                                                                                                                                                                                                                                                                           AĞCAGCAĞCAĞAĀĞCAGCĀĞCAĞĀĀGCAĞCAĞGAĞCAĞCAĞGAĞCAACCTGAGGAĞCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTTGTGAAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGAGCAGCAGAAAGAGCAGAATCAACAGGAGGAGCAGCAGCAGCAGTGGTAACAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCAGGÁGGÁGCAGCÁGCÁTGÁGCÁGCAGGÁGCAGGAGCAGCAAAAÁTATCAGCAGGÁGC
                                                                                                                          TGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAG 7943
                                                                                                                                                                                                                                        GGTAGCTGCCGGAGCCATTATCTCAAAAAGCAAAGAATGAAATGAATTCAGAGGTTGAAAT
                                                                                                                                                                                                                                                                                                                                      TGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                            AGGAGGAGCAGGAACAGTGGTAACAACAGCAGCAGCAACCAGAGCAGCAGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAATATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCAGCAGCATGAGCAGCAGTAGCAAAAATATCAGCAGAAGCAACAGGAGCAGCAGCAGA
AGCAACGTGAGCAGCAGCAGCAACAGCAGCATGAGCAGCAGCAGCAAAAATATCAGC
                                           AGAAATCAATGTCAAAGTGGAAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTC
                                                                                           AGGTGCAGCAGCAACCAGAGCAGCATGAGCAGGAGCAGGAGCAGCAACAGCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            136003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          136063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           136123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7403
                                                8003
                                                                                                                                                                                                                                             7883
                                                                                                                                                                                                                                                                                                                                                                                                                                             7763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7103
                                                                                                                                                                                                                                                                                                                                              7823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             135406
135106
                                                                                                 135166
                                                                                                                                                                                                                                                                                              135286
                                                                                                                                                                                                                                                                                                                                                                                               135346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              135466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             135523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              135583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            135643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            135763
```

Ś

맑

á

유 성

5 B 5 B 5 B 5 B 5 B

8004

TGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGGAAGCAAAAGATGCCGGAAGCTCTTA 8063

8 8 8 8 8 8 8 8 8

밁

밁

S

음 성 음

```
REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 28
AC141261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    135105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         134985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       134811
Consensus quality: 185790 bases at least Q40
Consensus quality: 186288 bases at least Q30
Consensus quality: 186286 bases at least Q30
Consensus quality: 186266 bases at least Q30
Consensus quality: 186266 bases at least Q30
Estimated insert size: 175000; agarose-fp estimation
Betimated insert size: 187243; sum-of-contigs estimation
Quality coverage: 12.9 in Q20 bases; sum-of-contigs estimation.
* NOTE: This is a 'working draft' sequence. It currently
* consists of 4 contigs. The true order of the pieces
* is not known and their order in this sequence record is
* arbitrary. Gaps between the contigs are represented as
* runs of N, but the exact sizes of the gaps are unknown.
* This record will be updated with the finished sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens chromosome 16 clone RP11-1335J10, WORKING DRAFT SEQUENCE, 4 unordered pieces.
AC141261
                                                                                                                                                                                                                                                                                                                                                                                                                                          -----Genome Center
Center: Joint Genome Institute
Center Code: JGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (11-MAR-2003) Production Sequencing Facility, Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 (bases 1 to 187543)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 187543)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC141261.1 GI:28913041
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_ACTIVEFIN
                                                                                                                                                                                                                                                                                           Summary Statistics
                                                                                                                                                                                                                                                                                                                                 Center clone name: RPCI-11_1335J10
                                                                                                                                                                                                                                                                                                                                                          Center Project Name: 2732500
                                                                                                                                                                                                                                                                                                                                                                               Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                          Web site: http://www.jgi.doe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequencing of Human Chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC141261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublishe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGAGTTGGAGTCACCAAGGCAGAAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGA 8123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGAGCAGCAGCAGCAGCAACAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCAGGAGTGAATACTTCTACAGCACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCAGGAGCAGCAGCAACAGGAGCAGCAAGAGCAGCAGGAGCAACAGCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCAGCAACATCAACCTGAGCAGCAGCAGCTGCTGCAGCAGCAACCAGCAGCAGCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCAGCAGGAGCAGTGGTAACAACAGCAG-----CAGGAGCAACAGGAGAAACAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ассаасасаталалателалетаасаесаеттесталаесаетаасаееттететаттеее в183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     187543 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     134723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HTG 11-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOE Joint
94598, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             134932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       134872
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 1.1%;
Best Local Similarity 40.5%;
Matches 1333; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           34052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATATTAACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGGAGTAGCAGCAGCAGTTGCAGTAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTAGCAGGAGGAGTAGCAGCAGCAGTAGCAGTAGCTGTGGCAGGAGGAGTAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTAGTAGCAGCAGCAGCAGCAGCAGCAGCAGGAGTAGCAGCAGCAGCNNNNNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGGACAGGTTCTGTAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           as
be
                                                                  AGTAGGTTCTGTTGGTGGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATAT
                                                                                                               AGCAGCAGTAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGT
                                                                                                                                                        TATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGT
                                                                                                                                                                                                   AGTAGCTGTGGCAGGAGGAGGAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGGAGT
                                                                                                                                                                                                                                                                                          AGGAGTAGCAGCÁTCGGCAGTTGCAGCÁGCTGTGGCAGGAGTÁGCAGCATCGGCÁGTTGC
                                                                                                                                                                                                                                                                                                                                     TACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                       AGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAGGATTTGTTACCAATAGTTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGCAGCTGTGGCAGGAGTAGCAGCATCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAACAGATGATTATATTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCAGCAGCAGCAGCAGTAGCAGCAGCAGGAGTAGCAGCAGCAGCAGCAGTAGC
                         AGCTGTGGCAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGC 3447
                                                                                                                                                                                                                                              AGGAACTGTTAATATCAACAAGGTTTATGGAGAA---ACAGAAGCTCTTGTAGAAAATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTC
                                                                                                                                                                                                                                                                                                                                                                              AGTTGCAGCAGCTGTGGCAGGAGGAGTAGCAGCATCGGCAGTTGCAGCAGCTGTGGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5051
5151
33438
33538
83950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       soon as it is available and the accession number will preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /estimated_length=unknown
33438. .33537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone="RP11-1335J10"
/clone_lib="RPCI human BAC
5051._5150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
/chromosome="16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         estimated_length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /estimated_length=unknown
83950. .84049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .187543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5050: contig of 5050 bp in length
5150: gap of unknown length
33437: contig of 28287 bp in length
33537: gap of unknown length
83949: contig of 50412 bp in length
84049: gap of unknown length
187543: contig of 103494 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 107.6; DB 14; Length 187543; Pred. No. 1.7e-05; 0; Mismatches 1940; Indels 20; G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                         6167
                                                                    6404
                                                                                                                                                                                                                                                                                                                                       6227
                                                                                                                                                                                                                                                                                                                                                                              3423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 33991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3417
S
                                        밁
                                                                           S
                                                                                                                                 밁
                                                                                                                                                                   8
                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                    35432
                                                                                                                                                                                                                        35372
                                                                                                                                                                                                                                                                                                              35312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           34772
                                                                                                                                                                                                                                                                                                                                                                                                     35252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34532
                                                                                                                                                                                                                                                                                                                                                                                                                                           7179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6405
    TATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGGAACAGTGGC 753
                                                                                                                                                                                                                                                                                                                                                                                                     GGCAGGAGGAGTAGCAGCAGTAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCTTCTACTGATGTAAATGTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGCAGCAGTTGCAGTAGGTGTGGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGCAGCAGCCGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCATCAGTAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGCAGCAGTTGCAGTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATAAAAAGAAATACCAAGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGTTTCGG
                                           AGTAGCAGCAGCAGCTGCAGTAGCAGTAGGAGGAGTAGCAGCATCAGCAGTTGCAGT
                                                                                      TGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGGACAAGAATAA 7478
                                                                                                                                                                            AGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCAT 7418
                                                                                                                                                                                                                                                                   ACAAGATAAAAAGTAAATGATGCTACGAAAAAATCTTACAATCAGCAGGTATTTCTAC
                                                                                                                                                                                                                                                                                                                                                       AAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGACGAAGTTAACAAAGA 7298
                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGTAGAAGATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGGAGCAGCAGCAGCAGTTGCAGTAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGCAGCTGTGGCAGGAGTAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGT---ACGAGAAAAAGT 7118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCAGCATCAGCAGTTGCAGCAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGAGGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCAGCAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGCAGCTGTGGCAGGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGCAGGAGGAGTAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGGAGTAGCAGCAGCAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTTTCTGTCAATAATATTGCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACA 6941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGAGTAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGGTAGCAGCAGTTGCAGTAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCAGGTACTGGAATCGGTTCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGT 6881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAATTCTAAAATTATGAC---TCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGAGGAGTAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTACCAGCATCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGCAGCTGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGCAGCAGTTGCAGTAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTGGCAGGAGGAGTAGCAGCAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGT
                                                                                                                                    AGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGCAGCTTGCAGTAGCTGTGGCAGG
                                                                                                                                                                                                                        AGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGCAGC
                                                                                                                                                                                                                                                                                                              AGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3477
```

Ş 밁 Ś 밁 S 밁 S **&** B

문 Ś 밁 Ś 멼 र् 밁 Ş 밁 S 밁 ş

```
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                             g
                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                           밁
               δ
                                           ₽
                                                                     Ş
                                                                                                  밁
                                                                                                                        र्
                                                                                                                                                         밁
                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGCCATTATCTCAAAAGCAAAGAATGAATGAATTCAGAGGGTTGAAATTGAGAAGAGTA 7894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGTAGCTGTGGCAGGAGTAGCAGCAGCAGCAGTTGCAGTAGGTGGCAGGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTACCAGCATCAGTAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGGAGTAGC
ACAAAGCATTTACGAGA-----TCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAA 8608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAAGCAACACATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGGAGTAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAGCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGGTAGCAGTTGCAGTAGCTGTGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATT----GATGTTATTGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAGCAGCAG-TTGCAGTAGCTGTGGCAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGGTAGCAGCATCAGCAGTTGAAGTAGC
                                                                                                                                                                                                                      GAGTAGCAGCATCAGTAGTTGCAGTAGCTGGCAGGAGGAGGAGCAGCAGCAGCAGTTG
                                                                                                                                                                                                                                                                                                                                    CAGGAGTAGCAGCAGCAGTTGCAGCAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAG
                                                                                                                                                                                                                                                                                                                                                                                             CAGCAGTTGCAGCAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGCAGCTGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                            AAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGĆAGGAGTAGCAGCATCAGCAGTTĠĆAGTAGCTĠTĠGCAGGAĞGĀGTĀGĆAGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATCAGCAGTAGCAGTAGCTGTGGCAGGAGGAGGTAGCAGCATCAGCAGTTGCAGTAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGCAGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGAAATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCGGTAGCTGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTGGCAGGAGGAGTAGCAGCAGTTGCAGTAGCTGGCAGGAGTAGCAGCAGCAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAACAGCATATCAAGG
                                                                                                                                                              CAGTAGGTGTGGCAGGAGGAGTAGCAGCAGCAGCTTGCAGTAGCTGTGGCAGGAGGAG
                                                                                                                                                                                      ATACTTCTACAGCACAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTATG
                                                                                                                                                                                                                                                TTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAG
                                                                                                                                                                                                                                                                                                         TGTTCAGAACAAATCGAATGGAATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAG
                                                                                                                                                                                                                                                                                                                                                                 TAGCAGCAGCAGCAGTTGCAGTAGCTGTGGCAGGAGTAGCAGCATCGGCAGTTGCAGCAG
                                                                                                                                 AAAATAATGATTACACAAAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7598
                                                                                                                                                                                                                                                                                                                                                                                                36270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    35910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3561
                                                                                                                                                                                           8434
                                                                                                                                                                                                                                                                                                            8314
                                                                                                                                                                                                                                                                                                                                                                    8254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             35850
                                              36630
                                                                                                                                                                                                                      36450
                                                                                                                                                                                                                                                                               36390
                                                                                                                                                                                                                                                                                                                                       36330
                                                                                                                                                                                                                                                                                                                                                                                                                                                          36210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           36090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 36030
                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 29
AC122227
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
      FEATURES
                                                                                                                                                  COMMENT
                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   36931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             36871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            36751
                                                                                                                                                                                         Parkway, St. Louis, MO
4 (bases 1 to 208332)
Wilson, R.K.
Direct Submission
                                                                                         Center: Washington University Center code: WUGSC
                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                 The sequence of Mus musculus 
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus (house mouse)
                              Center project name: M_BA0131H10
                                                Contact: submissions@watson.wustl.edi
                                                                         Web site:http://genome.wustl.edu
       Location/Qualifiers
                                                                                                         Genome
```

```
37051 CAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTA
                                                                                                                                                                         TAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGGAGATAAATTAGAAACGATTGCAA 8788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTA 8728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATCGGCAGTTGCAGCAGCTGTGGCAGGAGGAGTAGCAGCATCGGCAGTTGCAGCAGCTG
                                                                                                                                                                                                                                                   CAGCAGCAGCAGTTGCAGTAGCTGTGGCAGGAGTAGCAGCATCAGTAGTTGCAGTAGCTG
                                                                                                                                                                                                                                                                                                                                                                          TAGCTGTGGCAGGAGTAGCAGCATCAGCAGTTGCAGTCGCTGTGGCAGGAGGAGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGTTGCAGTAGCTGTGGCAGGAGTAGCAGCAGCAGTTGCAGTAGCTGTGGTAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGCAGGAGGAGTAGCAGCATCGGCAGTTGCAGTAGCTGTGGCAGGAGTAGCAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAG
                                                            TACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTA
                                                                                                                         TGGCAGGAGGAGTAGCAGCATCAGCAGTTGCAGTAGCTGTGGCAGGAGGAGTAGCAGCAT
                                                                                                                                                                                                                                                                                                                ATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGA 8848
         37103
                                                                      9021
                                                                                                                                                                                                                                                                                                                                                                                36930
                                                                                                                                                                                                                                                                                                                      8908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    36810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8668
                                                                                                                                      37050
```

Mus musculus Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Sciurognathi; Muroidea; Muridae; Murinae; Mus. 1 (bases 1 to 208332) Submitted (23-MAY-2002) Genome Se Parkway, St. Louis, MO 63108, USA 3 (bases 1 to 208332) McPherson, J.D. and Waterston, R.H. Direct Submission 208332 bp DNA lir Mus musculus chromosome 12 clone RP23-131H10, AC122227 AC122227.4 GI:40539152 Submitted (01-JAN-2004) Genome Sequencing Center, Parkway, St. Louis, MO 63108, USA On Jan 1, 2004 this sequence version replaced gi: Submitted (28-FEB-2003) Genome Sequencing Parkway, St. Louis, MO 63108, USA 2 (bases 1 to 208332)
McPherson, J.D. and Waterston, R.H. Genome Center) Genome Sequencing 63108, USA clone Sequencing Center, Center, linear complete sequence. gi:28604203 Center 4444 Forest 4444 4444 ROD 01-JAN-2004

Forest

Park

Forest

Park

. edu

```
S
                                ş
                                                     밁
                                                                                                      ક
                                                                                                                                          S
                                                                                                                                                               밁
                                                                                                                                                                              S
                                                                                                                                                                                                   밁
                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                  밁
                                                                     S
                                                                                         밁
                                                                                                                           밁
                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 722; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                    107235
                                                                                                                                                               107295
                                                      107475
                                                                                         107415
                                                                                                                            107355
                                                                                                                                                                                                                                       107175
                                                                                                                                                                                                                                                                           107115
                                                                                                                                                                                                                                                                                                              107055
                                                                                                                                                                                                                                                                                                                                                 106995
                                                                                                                                                                                                                                                                                                                                                                                     106935
                                                                                                                                                                                                                                                                                                                                                                                                                       106875
                                                                                                                                                                                                                                                                                                                                                                                                                                                           106815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               106755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 106695
                 ACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAAT
                                                                                                                                                                                                                                      GCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCA
                                  GAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCT
                                                    GAGAAGAGTATTTTCAATGAAGAAATAGAGTAACTAGCCCTTCTAAAAGGAATTGGAAGA
                                                                                                          GTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCG
                                                                                                                                                                                 TCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGAT
                                                                                                                                                                                                                                                                         TCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCT
                                                                                                                                                                                                                                                                                                             GAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCA
                                                                                                                                                                                                                                                                                                                                                GAAGTTAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATGCAGGAATCGGAGGAGCAATCGGAAGCCAATGTCTTGGTAAATAATTTTTGGAACA
GTAGGAGCAGTAGCAGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTAT
                                                                                        TTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTA
                                                                                                                                                                                                                                                                                                                                                                  GGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .208332
/organism="Mus musculus"
/mol_type="genomic DNA"
/db xref="taxon:10090"
/chromosome="12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone="RP23-131H10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 107.4; DB 9;
Pred. No. 1.8e-05;
0; Mismatches 1006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      208332
8064
                                                                                                                                                                                                  107294
                                                                                                                                                                                                                                      107234
                                                                                                                                                                                                                                                                                                                                                                                                     7404
                                                                                                                                                                                                                                                                                                                                                                                                                                        7344
                                                                                                                                                                                                                                                                                                                                                                                                                                                          106874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              106814
                                                     107533
                                                                                                                                                                                                                                                                                                             107114
                                                                                                                                                                                                                                                                                                                                                                  7464
                                                                                                                                                                                                                                                                                                                                                                                                                       106934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 106754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7164
                                                                                                                                                                                                                                                                                                                                                                                   106994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                               RESULT 30
AC116998/c
LOCUS
DEFINITION
ACCESSION
VERSION
                         REFERENCE
AUTHORS
                                                                      SOURCE
ORGANISM
                                                                                                                                                                                      S
                                                                                                                                                                                                          밁
                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
REFERENCE
                                                                                        KEYWORDS
        TITLE
JOURNAL
                                                                                                                                                                        108374
                                                                                                                                                                                                                                                                                                                                                         108074
                                                                                                                                                                                                                                                                                                                                                                                                                               107954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  107894
                                                                                                                                                                                                                                                                                  108194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             107714
                                                                                                                                                                                                                                                                                                                                                                                                             8425
```

```
107654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ANAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAG
                                                                                                                                                                                                                                                                                                                                                                                                             CAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                          GÁTGÁTGÁTGÁTGÁAGÁAGÁAGÁAGAÁGÁÁGÁAGATGAAGAAGAAGATGATGATGAAGAA 10807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAGATTATGAAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAGAAGAACAAGAACAAGAACAAGAACAAGAACAAGAACAAGAACAAGAACAAGAA 107713
GCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAG
                                                                                       AGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATT
                                                                                                                                                                                 GGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAAATGTA 8664
                                                                                                                                                                                                                                                                                                                                                                   GAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAGAAGAAGAACAAGAAGAAGAAGAAGAAGATGATGATGAAGAAGAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAG 8244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGA 8184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAA
                                             8833
108422
                                                                                                                                                                                                                                                                                                                                                                                                                8604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8364
                                                                                                                                       8784
                                                                                                                                                                                                                                                                                                                                                                                                                                                          108133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          108013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           107893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             107773
                                                                                                                                                                                                                                                                                                                                                                   108193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 107953
```

AC116998
AC116998
ITTION Mus musculus BAC clone RP23-16F6 from 18, complete sequence.

SION AC116998
ON AC116998.3 GI:24080765
HTG.

EXAMISM EMBECULUS (house mouse)
E Mus musculus (house mouse)
E Mus musculus
EURATYOTA; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Euarchontoglires; Glires; Rodentia;
Sciurognathi, Murcidea; Murinae; Mus.

ENCE 1 (bases 1 to 216959)
ENCE 1 sak, A., Kozlowicz, A., Spalding, L. and Mangiapanello, L.
The sequence of Mus musculus BAC clone RP23-16F6
Unpublished (2001)
ENCE 2 (bases 1 to 216959)

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAI
             repeat_region
                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This sequence was finished as follows unless otherwise noted: all regions were double stranded, sequenced with an alternate chemistry, or covered by high quality data (i.e., phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by sequence from more than one subclone; and the assembly was confirmed by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (28-MAY-2002) Genome Sequencing Center, Parkway, St. Louis, MO 63108, USA 5 (Dases 1 to 216959) McPherson, J.D. and Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4 (bases 1 to 216559)
McPherson, J.D. and Waterston, R.H.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
Submitted (05-APR-2002) Genome Sequencing Center, 4444 Forest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wilson, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NOTICE: This sequence may not represent the entire insert of this clone. It may be shorter because we only sequence overlapping clone sections once, or longer because we provide a small overlap between neighboring data submissions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (08-NOV-2003) Department of Genetics, Washington University, 4444 Forest Park Avenue, St. Louis, Missouri 6: On Oct 17, 2002 this sequence version replaced gi:21218578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (17-OCT-2002) Genome Sequencing Center, 4444 Forest Parkway, St. Louis, MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 (bases 1 to 216959)
McPherson, J.D. and Waterston, R.H.
                                                                                                                                                                                                                                                                        SOURCE INFORMATION:
The RPCI-23 BAC Library has been constructed by Kazutoyo Osegawa and Minako Tateno in the laboratory of Pieter de Jong and Minako Tateno in the laboratory of Pieter de Jong (http://www.chori.org) from female C57BL/6J mouse kidney and/or brain genomic DNA. The clone and detailed information can be obtained from Research Genetice, Inc. (http://www.resgen.com) or provided from Research Genetice, Inc. (http://www.resgen.com)
                                                                                                                                                                                                                                                                                                                                                                                                          Mapping information for this clone was provided by Dr. Wes Warren, Department of Genetics, Washington University, St. Louis MO. For additional information about the map position of this sequence, see http://genome.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequencing of Mus musculus
                                                                                                                                                                                                     This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Parkway, St. Louis, MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
                                                                                                                                                                                                                        NEIGHBORING SEQUENCE INFORMATION:
                                                                                                                                                                                                                                                           Pieter de Jong and coworkers at http://www.chori.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MAPPING INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          restriction digest.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: submissions@watson.wustl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Center project name: M_BA0016F06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Web site: http://genome.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Center: Washington University Genome Sequencing Center Center code: WUGSC
                                                                                                                                                                                 sequence is the entire insert Location/Qualifiers
                 /clone="RP23-16F6"
/clone lib="RPCI-23"
1271. .1406
                                                                                        /mol_type="genomic DNA"
/db_xref="taxon:10090"
/chromosome="18"
rpt_family="ERVK"
                                                                       map="18"
                                                                                                                                               organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (2001)
                                                                                                                                                                    .216959
                                                                                                                                                                                                       of the clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Forest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63108,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Park
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Park
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Park
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
repeat_region
                                    repeat_region
                                                                     repeat_region
                                                                                                        repeat_region
                                                                                                                                                 repeat_region
                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /rpt_family="B4"
1611__1806
/rpt_family="RMER1A"
3133__3210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_t.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rpt_family="Alu"
15684. .1570"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_family="ERV1" 3343. .3424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="ERV1"
3256. .3331
                                        /rpt_famil 29717. .29
                                                                           /rpt_fami
29355. .2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /rpt_1
21960.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rpt_famil
18237. .18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /rpt_family="B4"
13130. .13212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /rpt_family="MaLR"
6891. .6948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt_family="ERV1" 3450. .3501
                                                                                                                /rpt_fami
28814 2
                                                                                                                                                                                                                                                                                                                                        /rpt
25483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20944.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /rpt_family="ERVK"
17924. .18007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /rpt_family="Alu"
17017. .17905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /rpt_family="MIR"
15937. .16017
                                                                                                                                                    /rpt_f
28584.
                                                                                                                                                                                                                            /rpt 1
27793
                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt
23821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_t
23315.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_family="ERVK"
22439. .22792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rpt_family="Malk"
|2422. .12679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'rpt_family="ERV1"
                                                                                                                                                                                       /rpt_family="L1"
28085. .28193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      jģ
                                                                                                                                                                                                                                                                                                                       'n.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rpt_family="MaLR"
                                                                                                                                                                                                                                               fami
                                                                                                                                                                                                                                                                                  fami
                                                                                                                                                                                                                                                                                                                       _£ami
                                                                                                                                                                                                                                                                                                                                                            _£ami
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _famil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _family="Alu"
                                                                                                                                                                      _family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _family="ERV1"
     family="82"
3. .30313
                                                                                                                                                                                                                                                                                                                                                                                                fami
                                                                                                                                                                                                                                                                                                                                                                                                                                 family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           family="MaLR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    family="ID"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          family="MaLR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                family="L2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .famil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .18007
                                                                               .29568
                                                                                                                  .28948
                                                                                                                                                                                                                                                                                                                                                                               24469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17015
                                                                                                                                                                                                                                                                                ily="B4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                      3968
                                                                                                                                                                                                                                                                                                                   ly="L1"
                                                                                                                                                                                                                                                                                                                                                            ly="B2"
                                                                                                                                   ly="Alu"
                                                                                                                                                                                                                                                                                                                                                                                           LY="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        y="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        y="Alu"
```

```
밁
                                                                       Ş
                                                                                                                     밁
                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
     ş
                                         밁
                                                                                                                                                     S
                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 1.1%; Score 106.2; DB 9; Length 216959; Best Local Similarity 42.3%; Pred. No. 2.5e-05; Matches 652; Conservative 0; Mismatches 888; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       37943 AGCAGTAGCAGTAGCAGAAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGT
                                       37583 AGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGT 3752
                                                                                                                                                                                                                                                                                                      6495 GCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTAGGAGGCCGAGTGGC 6554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6315 ATCAGGAGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGTGGTGGTGGTAGAATGT
     6735 AGATGAATCAAACACGAGAGCAAGAGTGAAAAATTCTAAAATTATGACTCGAAACAAGTT 6794
                                                                                                                                                       GATTTTGGTAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAA 6674
                                                                                                                                                                                                                                                                                                                                                                                      AAAAACTACAATGTCTGATGAAGGTTTCGGAGAAGAAGAAGCTGAAATTACAGCAGATTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGAGTAGGAGCTTCTTCTGATACCAATATTATAAAAAAGAAATACCAAGACAAGAGTTGG
                                                                                                                   AGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGT
                                                                                                                                                                                                                                                                                                                                                  AGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGT 3776
                                                                             TGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTGGCAGTTACCAA 6734
                                                                                                                                                                                                                                   AGGAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAAGCAAA 6614
                                                                                                                                                                                                                                                                        AGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAGCTGTAGCAGT 3770
                                                                                                                                                                                                                                                                                                                                                                                                                                AGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGA
                                                                                                                                                                                             AGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGA 3764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="L1"
44131. .44614
/rpt_family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt
39210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /rpt_t
38670.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7rpt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /rpt_:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt_f
32927.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7rpt 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /rpt_1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_f
39623.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /rpt_family="B4"
43066. .43277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /rpt_tamily="
36379. .37961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_family="ERV1"
30980. .31076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'note="Unresolved tandem repeat."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _family="B2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             family="L1"
[. .36378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    family="RMER6A"
. .44127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      family="ERV1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _family="MaLR'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       family="B2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               family="B4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    family="B4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _family="B4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            family="Alu'
7. .31803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  family="B4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . .35980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .38475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .41744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6374
                                                         밁
                                                                                           S
                                                                                                                                     밁
                                                                                                                                                                     ঠ
                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                     S
                                                                                                                                                                                                                 36623
                                                                                                                                                                                                                                                                                                                                                                      36743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     36923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               36983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             37343
                                                                                                                                                                                                                                                                                                                                                                                                                                                  36803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          37043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  37463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37523
                                                           36503
                                                                                                                                                                                                                                                                                            36683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7035
                                                                                                                                                                                                                                                                                                                              7572
7812 AACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCA 7854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCAGTAGCAGTAGCAGTAGCAGAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATTCTTGCAGCCGGAGTATCTGGGAGTGGTTTCTGTCAATAATATTGCAAATAAGGTAGA 6914
                                                           AGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGT
                                                                                                                                                                           TGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGG 7751
                                                                                                                                                                                                                 AGCAGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGA
                                                                                                                                                                                                                                                                                            AGCAGTÁGCAGAAGCTGTAGCÁGTÁGCAGTÁGCAGTAGCAGTAGCAGTAGCAGTAGCÁGT 3662
                                                                                                                                                                                                                                                                                                                                                                      AGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGT 3668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGA 3680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGT 7451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCAGTAGCAGTAGCAGTÁGCAGTÁGCAGAAGCTGTÁGCAGTAGCAGTAGCAGTAGCAGT 3698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACAGCAGCAAATGCAGGAATCGGAGGGAGCCAATGGGAGCCAATGTCTTGGTAAATAA 7214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCTGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTGACTTCCGTACGAGAAAAGTAAATGTAACGGCAAAAGAGAGAAAAAATATTAAGCA 7154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTTGCAGCAGTTACCGG 7034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACAGATATCGATCATAGTACTTTACACTCTTCTACTGATGTAAATGTAAAAGCTCTTAA 6974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGAGCTGTAGCAGTAGCAGT 3740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTGG
                                                                                                                                     AGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGA
                                                                                                                                                                                                                                                    AAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTA 7691
                                                                                                                                                                                                                                                                                                                          TGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGG 7631
                                                                                                                                                                                                                                                                                                                                                                                                          TCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGT 3674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGATATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCAGTÁGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGA 7391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGAAGCTGTAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTTTAGACGAA---GTTAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAAA 7331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTTGGAACAGCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAA 7274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCAGTAGCAGTAGCAGAAGCTGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCAGTAGCAGTAGCAGTAGCÁGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGA 3716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTGA 7094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCÁGAAGCTGTAGCAGTAGCÁGTAGCAGTÁGCÁGTAGCÁGAAGCTGTÁGCÁGTAGCAGT 3722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCAGTAGCÁGTAGCÁGAÁGCTGTÁGCAGTAGCÁGTAGCAGTAGCAGTÁGCAGTAGCÁGT
                                                                                               AAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATT 7811
                                                                                                                                                                                                                   36564
```

밁

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REMARK
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 31
AF202180
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AF202180 16377 bp DNA linear INV 20-MAY-2004 Plasmodium falciparum erythrocyte membrane-associated giant protein antigen 332 gene, complete cds.
AF202180 AF322999 AF323000 AF323001 AF327072 AH010491
AF202180.3 GI:13508498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
Submitted (08-DEC-2000) Parasitology, Submitted (08-DEC-2000) Parasitology, Submitted (17-2000) Parasitology, Submitted (18-2000) Parasitology, Submitted (18-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Shan,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 (bases 1 to 16377)
Shan, St., Yu,X.B., Li,X.R. and Ma,C.L.
Shan, S.L., Yu,X.B., Li,X.R. and Ma,C.L.
Direct Submission
Submitted (05-NOV-1999) Parasitology, Sun Yat-Sen University of Medical Sciences, 74 Zhongshan Road II, Guangzhou, Guangdong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plasmodium falciparum Eukaryota; Alveolata, Apicomplexa; Haemosporida; Plasmodium. Eukaryota; Alveolata, Apicomplexa; Haemosporida; Plasmodium. 1 (bases 1 to 16377)
1 (bases 1 to 16377)
Shan,Z.X., Yu,X.B., Li,X.R., Ma,C.L., Fang,J.M., Lu,J.H. and X,J. Shan,Z.X., Yu,X.B., Li,X.R., Ma,C.L., Fang,J.M., Lu,J.H. and X,J. Molecular cloning and structure analysis of the Plasmodium Molecular cloning and structure analysis of the Plasmodium falciparum erythrocyte membrane-associated giant protein Ag332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (09-FEB-2001) Parasitology, Sumedical Sciences, 74 Zhongshan Road II, 510089, China
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gi:13111670,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence update by submitter On or before Apr 2, 2001 this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (24-FEB-2001) Parasitology, Sun Yat-Sen University Medical Sciences, 74 Zhongshan Road II, Guangzhou, Guangdong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence update by submitter 5 (bases 1 to 16377)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence update by submitter (bases 1 to 16377)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           510089, China
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Plasmodium falciparum (malaria parasite P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                or before Apr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 16377)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sciences, 74
China
/protein_id="AAF15293.3"
/db_xref="G1:13508497"
/db_xref="G1:13508497"
/db_xref="G1:13508497"
/translation="MKELESERPKEKKYNIEDMEETEKENEIEKIMDENKETEQTEEG
/translation="MKELESERPKEKKYNIEDMEETEKENEIEKIMDENKETEQTEEG
NTEEFVQEKELAQETLENEIIVDHIKEBEDTRNVKEQESVLEESPIEBETVVEEETPKEQL
NEEVEEFILMEIPLEEQVPKELPQEEIEGIVVEELPIDEHLSSEETTVTEEDTPKGQL
INEEKEKPVEEKSVSEEIPVEEKSVSEEIPVEEKSVSEEIPVEEKNVSEEIPSGGIAIEDVPSE
EIPVEEKNVSEEIPVEEENVSEEIPVEEENVSEEIPVEENVSEEIPSGGIAIEDVSU
DEETVTEEITVDEKIYDKLPNEIETVNEEMPVEDETLTEQISSEHERVPEEIIEEKFF
                                                                                                                                                                                                                                                                                                                                 /codon_start=1
/product="erythrocyte membrane-associated
antigen 332"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Plasmodium falciparum"
/mol_type="genomic DNA"
/isolate="FCC1/HN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ore Apr 2, 2001 this sequence 70, gi:12232085, gi:13177607, Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="erythrocyte membrane-associated giant protein
antigen 332"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   country="China:Hainan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   chromosome="11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     db_xref="taxon:5833"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 16377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .>16377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        province"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sun Yat-Sen University of 
I, Guangzhou, Guangdong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sun Yat-Sen University of 
I, Guangzhou, Guangdong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         version rep
gi:12719373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             falciparum)
                                                                                                                                                                                                                                                                                                                                                                            giant protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of.
```

BORGER AND STREET, PERSON MERGENERS AND STREET, PERSON MERGEN PROPERTY OF THE STREET, PERSON MERGEN PROPERTY

```
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 1838; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                   5605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCAATGTA 5190
                                                            CATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGAAAAGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTCATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATGCAAAAGATCAAAAAACAATAAATACAATTGCCCGGAAATG---CAAATGGAGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTGAAGAGGTCTTAGAAGAAGATGAATCAATTACTGAAGAATAGTAGAAGAAGAAGTA
                                                                                                          GAAAAAATTATACCAGAAGTATCTGTTACTGAAAAACGTTGTTGAAAAAAGAAGGATTAGAT
                                                                                                                                                  GGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAAT
                                                                                                                                                                                             CAGGAAGTTGAACAAAAAGAATCAGATACTAATGAAATTGAAGAAACTAAATTAGCTAAT
                                                                                                                                                                                                                                      AAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCT
                                                                                                                                                                                                                                                                                 AATATTCCAGTAGAAAGAGAATCAGTTACAGAAGATATAGTACAAGAACCATCATTAGCT
                                                                                                                                                                                                                                                                                                                           AATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAAGC
                                                                                                                                                                                                                                                                                                                                                                      TACGAAAAATAAATGAAGAAGTTGAAAAAGCAAAATTTCAAGAAGAAAAATTACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                             TCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATATTACTACTGCTGATATACACACTAGAGGTGAAACAGAAACAAAATATAATCTAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATGTTAATGTTCTAGCTGAAAATACGA---GTCAAGTGGTCACAAATGCGACAGTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATATTATTAATGAACATACTCCATTAGAAGAAACGAAAATTGAAGAATTACCAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGTCCTTTAAAGGACAAGGACCTACAGATAATGTATCAGTCGAAGACGTAAATTCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTAAGGATGAATCTATGAATGAAAAAATACCATTAGAGAAATCATCATTTGTTGATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAAAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATGTTCAAAAGTCAAAAGGAGTAATTGAAAACGTAGGAGAAATATATTCTGTAAAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTGTAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGAAAAAATATCAATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAACAATCAGTTATAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTGTAGAAGAAGGATCAGCTACTGAAGTAGTTGTAGAAGAAGGATCAGTTTCTGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EDKALNEKIMSEEIVIEDGNVHEVVPÄEVSVTEEIPGVEETTNNESHVKGENVVNEV
VVDDNSVNDEIGPDDSSIEIYTVDSKOVFHKEENVSEREVRSDENHHISRKKAEN
FVKKIENEKSSVGHPUTEYTSKENIÄEVENYDSFREWRSDENHHISRKKAEN
FVKKIENEKSSVGHPUTEYTSKENIÄEVENSHIMFKENVTEEVPKEUKYEENTVEEVF
EEVTSKENIIEEAPGDINSERHIEVENSHEMFKENTEEVENSTURHMFDFDLD
DILKIPEAGNRLNKLETLVDVHLDVIEKYROBWKKNRKEDTLYICLEEINKLSEDTLM
KFYGSDSKASANDNDTYMVIKILKDNWGTGRIVDTIANSLNKSYNSLYNHLYIEMEKD
LLINKTETPNKWSKGHNKLDNWKEEKWFKLFKADLKIDMRNTYESDQNEEENNESSM
NELSDELIKNNTSDNWARNEQKTLEKNKEYSNLGKDLGLIEKQKIIMKSKIVKNVNNIE
NWFDEMWFKNVVNELKEKNDEJKTLEKNKEYSNLGKDLGLIEKQKIIMKEFLNRSIDKFI
KEKKIKDKETYLDYJIDDIIKRIVEDTSHVNNIKERATUNTSHDWFRLLRQGNEAQN
SISQEVDILKEKYKKLISEEDNKKENNNDDEKYPELKDNIKCEENVSFUILRRSNK
KDQLFLEEKKKKNGDLNNTLTSSDGKKININEALEESKNGNEDKNSGNMEKSRKFRDR
RTERKEKDDLRVGLLODYSENIFEQIQMMENONKDKKKETKNILKTSIDLDKNLLRE
RYTERKEKDDLRVGLLODYSENIFEQIQMMENONKDKKKETKNILKTSIDLDKNLLRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YKKEKNI INQSEKEFSVNEN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 105.6;
Pred. No. 7.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches 2479;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; DB 2
.9e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                  5844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3444
                                                                                                          4044
                                                                                                                                                                                             3984
                                                                                                                                                                                                                                      5784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3744
                        4104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17;
                                                                        S
                                                                                                                            밁
                                                                                                                                                                  δ
                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                       3
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
S
                                        밁
                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4105
                                                                                                                                                                       6838
                                                                                                                                                                                                               5005
                                                                                                                                                                                                                                                                                                     4945
                                                                                                                                                                                                                                                                                                                                                                                           4885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5905
AATGTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAAAAGTTGGATCAGTTTCTGAAGAAATAATAGTAGAAGAAGTGTCAGCTTCTGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGTGTTG----GTGGAAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAATTGTAGAGGAAGAAGTATCAACTACTGAAGAAGTTAAAGATATTGGATCAGTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCAGCTTGTGAAGAAATAGTAGAGGAAGAAGAATCATCTAGTGAAGAAATAGTAGAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAACCAGT
                                          GGATTAGATACTGAAGAAATAGTGAATGAAGTATCAGTTACTGACGAGGTCATAGAAGAA
                                                                                   ATTIGCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCTTCTACTGATGTA
                                                                                                                              GCTTTTGCAGAAATTATAGAAGAAAAAGGACCAAATAATGACGAAATTGTAAAAGAAGAA
                                                                                                                                                                    GGTTCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTCAATAAT
                                                                                                                                                                                                                 GTTACTGAAGAAATAAAAGAAGAAGAATCGATTACTGAGAATGAAGCAATAGAAGAATCA
                                                                                                                                                                                                                                                          ATGACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATC
                                                                                                                                                                                                                                                                                                       GCTGAAGAAGTCAAAGAAGAAGTTAGTTACAGAAGAAGCTGTACAGTATGAAGGATCT
                                                                                                                                                                                                                                                                                                                                              GCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGAAAAATTCTAAAATT
                                                                                                                                                                                                                                                                                                                                                                                           GAAGAAATTGTTGGACCGGAAGGATCTGTTACTGAAGAAATAGTAGATTACGGATCATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGTTTTAGGACAAGAAGGATCAATGAATGAAGAAATATTAGAAAAAGAATCAATTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAAAGATTTTGGTAAAA-----AAAGCTGAGATTACAGCAAAACGTTATAGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTGGTGAAACCGAATCGGTTACTGAAGAAATAGTACAAAAAAGAAGTATCAGATGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCCGGGGTAGGAGCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAAC----TACAATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAGTAGGAGCTTCTTCTGATACCAATATTATAAAAAGAAATACCAAGACAAGAGTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCAAATGTTGAAGAAATAGTACAGGAAGAAGGTCCTGTTGCTCAAGAAATTGTACATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTÄTTGÄÄGAAATTGTÄGÄÄÄCAGAATCÄTCTACTGAGAÄAGTTCTAGAAGATGTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCTGTAAAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGAGGTATTAGAAGAAGAAGGATTCGGTACTGAAGAATTTGTAGGACAACAAGGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATAATAGAAGAAGTGTCAAGTACTGAAGAAGTCTTAGAAGAAGAAGGATCGGTTACGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGGAGGAAGAATCATCTAGTGAAGAAATAGTAGAGGAGGAAGAATCATCTAGTGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAGAAGAAACAGATGATTATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGAATCATCTAGTGAAGAAATAGTAGAGGAGGAAGAATCATCTAGTGAAGAAATAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTA---CAGTGATTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4224
7017
                                          5184
                                                                                     6957
                                                                                                                                5124
                                                                                                                                                                         6897
                                                                                                                                                                                                                                                            6837
                                                                                                                                                                                                                                                                                                                                                  6777
                                                                                                                                                                                                                                                                                                                                                                                                                                      6717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5964
                                                                                                                                                                                                                                                                                                                                                                                           4944
                                                                                                                                                                                                                                                                                                       5004
```

밁 \$

밁 S 5 밁 Ś

밁

유

밁 Ś ঠ 밁 Ś 밁 Ś 밁

밁

밁 S 밁 ঠ β र्

Ş

7018 CTROCAGCATTACCAGACATATCACCACATACACATACACACAC
B
8086 CGAMGANGARTCHTCHICAGGANGATGGATATATCAMAGATGANATGTATATCAMAGATGTA \$109 8086 CGAMGAAGATTHTCHICAGGANGATGGATATATGANGATGANATGTANATATANATANAT

밁

닭 S

음 성

밁 ક

Ş

유정

밁 Š 8

멍

밁

8 & 8

중 음 중

8 8 8 8

8 8 8 8 8 8 8

ঠ

1599

```
Fragment Name
AC129389 0
AC129389 1
AC129389 2
AC129389 3
AC129389 4
Continuation (2 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 32
AC129389 1/c
WPCOMMENT
                          S
                                                     문
                                                                          Ś
                                                                                                        밁
                                                                                                                         S
                                                                                                                                                   밁
                                                                                                                                                                            Ś
                                                                                                                                                                                                밁
                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              음 성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 42.1
Matches 591; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence split
                                                                                                        16349
                                                                                                                                                         16409
                                                                                                                                                                                                           16469
                                                                                                                                                                                                                                                                                                                                                                               7105 GTACGAGAAAAGTAAATGTAACGGCAAAAGAGGGAAAAAATATTAAGCAAACAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9217
   TCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCT
                                                                           GAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCA
                                                                                                   GGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAATGTAGATATTACAACA
                                                                                                                                                       GCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAA
                                                                                                                                                                                                       GAAGTTAACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAAAATCTTACAATCA
                                                                                                                                                                                                                                                        GCTGTAGAAGATAGAAAAAATTCTGAAGGAAAAAGGAACAGAAGTTTTAAAAAACTTTAGAC
                                                                                                                                                                                                                                                                                                         AATGCAGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTGGAACA
                                                                                                                                                                                                                                                                                                                                                         AAGACAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGGATCTGCTACTGAAGAATAGTACAAGATGGATCAGGTACTAATGATTTTGTAGGA 7686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTTATAATATAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGACAGTTAGTGTAAAGAATCAAATAAATAGAACTAATGATGTTGATTTAGCAGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAGTTACTGAAGAAGTTGTAGAACAAGGGGTTCAATTGCTCAAGAAATAGTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTTCTGAAGAAATAGTAGAAGAAGAAGGATCAGTTACTAAAGAAGTTGAGGAAAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAATTTTGGCAAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAATCAGCTACTGAAGAAATAATACGGGATGAAACTAATGTTGAAGAAGTCCTAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTGAATCGAATGTG----TCATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCAGTAACTGAAGAATTAGTAGATGAAGGATCAGTAACTGAAGAATTAGTAGATGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAACAAGGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             of 5)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   into 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                           100001
200001
300001
400001
0f AC129389
                                                                                                                                                                                                                                                                                                                                                                                                                     1.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fragments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Begin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9465
                                                                                                                                                                                                                                                                                                                                                                                                        Score 105.2; DB 14; Lengt: Pred. No. 4.4e-05; O; Mismatches 806; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                         110000
210000
310000
410000
425691
425691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS AC129389 Accession 
End
                                                                                                                                                                                                                                                                                                                                                                                                                                                           base 100001 (AC129389 Rattus norvegicus clone
                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 110000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AC129389
                                                                                                                                                                                                                                                                                                                                                                                                         7;
                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                               7404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7446
                                                    16231
                                                                                                                                                     16350
                                                                                                                                                                                                        16410
                                                                                                                                                                                                                                                        1647
                                                                                                                                                                                                                                                                                                         16530
                                                                                                                                                                                                                                                                                                                                                         16590
                                                                                                                                                                                                                                                                                                                                                                                  7164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9216
                                                                                                     1629(
                                                                                                                                                                                                                                                                                                                                                                                                        w
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Э
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                              RESULT 33
E10125
                                                                                                                                   ঠ
                                                                                                                                                                 밁
                                                                                                                                                                                  ð
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                     F
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                   15394
                                                                                                                                                                                                                                                                   15454
                                                                                                                                                                                                                                                                                                                    15514
                                                                                                                                                                                                                                                                                                                                                                                                                     15634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15930
                                                                                                                                                                                                                                                                                                                                                                   15574
                                                                                                                                        8483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16110
                                                                                                                                                                                          8423
                                                                                                                                                                                                                                                                                                                                                                                                                                            8125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15990
E10125 2069 bp RNA
DNA encoding an immunogenicity protein.
E10125 GI:22026753
JP 1995284392-A/1.
                                                                                                                 CAGAAGAAGAAGAAGAAGAAG
                                                                                                                                                                                                                                                                  GAAGGAAATTTGTTCAGAACAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGAT 8304
                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAAGCAGTAACAGGTTCTGTATTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGAAGAAGAAGAAGAAGAAAAAAAGAAGAAGAAGAAGCAGAAGCAGAAGCAGAAG
                                                                                                                                                                                                                 GCAGGAGTGAATACTTCTA--CAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAA 8422
                                                                                                                                                                                                                                                                                          GAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAGTATTGCCGGA 8364
                                                                                                                                                                                                                                                                                                                   GGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                     GAAGAAGAAGAAGCAGAAGAAGAAGAAGCAGAAGCAGAAGCAGAAGCAGAAGCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTAGGAGCAGTAGCAGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGAT 7764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTGTGAAAGCAGCTGAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTA
                                                                                                                                       CTTTAAATGATACAAAGAATGAAG
                                                                                                                                                                                       agcaagattatgaaaataatgattacacaaaaaaatatatttcagaagtcaatgctcttg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGAAGAGTATTTTCAATGAAGAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGA 7944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAGAAGAAGAAGAAGATTTTTTTGAAGCAGAAGAAAAAGAAGAAGAAGAAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAATTCAGAGGTTGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAAGGATTAACCGTAGGAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u> ACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAAT</u>
                                                                                                                                        8506
                                                                                                                15251
                                                  linear
```

15575

PAT 29-SEP-1997

7827 969 911

851

7887

1089

8121

1269

8063 1209 8007 1149

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                 ঠ
                                                                                                                           밁
                                                                                                                                                                 δ
                                                                                                                                                                                                      멼
                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                       멼
                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 748; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Doi, H., Nagakuchi, Y., Tanaka, Y. and Fujisaki, Y.

GENE CLONE MANIFESTING CHICKEN LEUCOCYTOZOON IMMUNOGENIC PROTEIN
AND GENE RECCOMBINANT VACCINE AGAINST CHICKEN LEUCOCYTOZOON

Patent: JP 1995284392-A 1 31-OCT-1995;

DOUBUTSUYOU SEIBUTSUGAKUTEKI SEIZAI KYOKAI, KITASATO INST:THE

OS Leucocytozon caulleryi

PD 31-OCT-1995

PF 19-APR-1994 JP 1994080643

PF 19-APR-1994 JP 1994080643

PF 19-APR-1994 JP 1994080643

PC C12N15/09,A61K39/015,C12P21/02;

CC strandedness: Double;

CC topology: Linear;
FH Key Location/Qualifiers

FH FH Source /organisme'Leucocytozon caulleryi' FT

FT source /organisme'Leucocytozon caulleryi' FT
                                                                                                                                                                                                                                                                                                                                                                                                 7290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7110 AGAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGC
                   7588
                                                                                                                                                                                                                                           7410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7170 AGGAATCGGAGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGT
                                                                                            7530
                                                                                                                                 672
                                                                                                                                                                                                                                                                                   552
                                                                                                                                                                                                                                                                                                                                                           492
                                                                                                                                                                                                                                                                                                                                                                                                                                      432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unidentified unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             777777
GTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAACA 7647
                                                                                                                                                                                                                                                                                                                      TATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAAT
                                                                                                                                                                                                                                                                                                                                                           ACAAGAAGAGCATGAAAAAGTAACACATGAAGAAGAAAAAAAGAAGAAGAACACATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                   TAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAAAATCTTACAATCAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAÀAACGAÀACAACACATTATGAÀAGAGAAATAATTTATATAGTAGATGATTTACCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u> ÁAACACAACATCTGAACACGAAATAACAATACCTAATGAAAACGATATAAAAACCAAATGA</u>
                                                                                      AACAGTGGCAGTT--ACAAATATTAAAAAGAAATTCCCGGAGTTACTGTTGAAAATTCTTTT
                                                                                                                                                                                                                                           TAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGGA
                                                                                                                                                                                                                                                                                 A TAGAAAAA A GAAGAA TGAAGAAGTAA TA CA TGAAGAA GAAAAAA GAAGAAGTAA CA CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGT
                                                                                                                                   NACACATGAAGAAAAAGAAAAAGAAGGCATGAAGAAGTAATACATGAAGAAGAAAAAAGA
                                                                                                                                                                     CAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGG
                                                                                                                                                                                                        TGAAGAAATAGAAAAAGAAGAGCATGAAGAAGTAATACATGAAGAAGAAAAAGAAGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>AGTAAATGTAGAAGAATCAGATGAAACAGAACATATAACATATGAAATAGATAATGACAT</u>
                                                         <u>AGAAGTAACACATGAAGAAATAGAAAAAGAAGAGCATGAAGAAGTAATACATGAAGAAGA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         lassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product='immunogenicity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="unidentified"
/mol_type="genomic RNA"
/db_xref="taxon:32644"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism='Leucocytozon'shizuoka'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note='ECORI adaptor'
2045. 2069
/note='ECORI adaptor'
25. 2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches 963;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 104.2; DB 6
Pred. No. 0.00026;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YUJIRO
                                                                                                                                                                         7529
                                                                                                                                                                                                                                                                                     611
                                                                                                                                                                                                                                                                                                                                                                                                   7349
                                                                                                                                                                                                                                                                                                                                                                                                                                        491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               핝
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                      닭
                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                               á
                                                                                                          8
                                                                                                                                                   밁
                                                                                                                                                                                    Ş
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                       र्
                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1150
                                                                                                                                                                                                                              1690
                                                                                                                                                                                                                                                                                                                                                                                   1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7648
     1870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAAATTCAGAGGTTGAAATTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGTAATÁCATGAAGAAGAAAAAGAAGAAGTAACÁCATGAAGAAAAAAGAAAAÁGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ANTGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAGAAGAAGTAACACATGAAGAAATAGAAAAAGAAGAGCATGAAGAAGTAATACATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAAAAGAAGAAGTAACACATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAAAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -TTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCA-GATAATGTGAATATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGAAGAAAAGAAGTAACACATGAAGAAGAAAAAGAAGAAGTAACACATGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGGAAGCTCTTA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATACATGAAGAAGAAAAAGAAGTAACACATGAAGAAGAAAAAGAAGAAGTAACACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCAATGTCAAAGTGGAAAAAGAGAAACAGAGTGACTGCTGGAATCTCAAGGAGCTTCTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATGAAGAAGTAATACATGAAGAAGAAAAAAGAAGTAACACATGAAGAAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACATGAAGAAGAAAAAGAAGTAACACATGAAG--AAATAGAAAAAGAAGAAGACATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAAGAAAAAGAAGAAGTAACACATGAAGAAATAGAAAAAGAAGAAGCATGAAGAAGTAAT
     GAAAAAGTAACACATGAAGAAGAAGAAAAGTAACACATGAAGAAGAAGAAAATGTAACA
                                         GGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAAT
                                                                                                                  GTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTAT
                                                                                                                                                                                                                                                               GCTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGT
                                                                                                                                                                                                                                                                                                        TTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAATATATTTCAGAAGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                   ATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAAAAGTAACACATGAAGAAGAAGAAAAAAGTAATACATGAAGAAGAAGAAAAAAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ĠAĀGAĀĠĀĀĠĀĀĠĀĀĀĀĀGTĀĀCACATGĀĀGĀĀGĀĀGĀĀĀĀĀĀĞTĀĀCACATGĀĀĠĀĀĠĀĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATGAAGAAGAAGAAAAÁGTAÁCACATGAAGAAGAAGAAAAAAGTAACATATGAAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ---TTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGTAACACATGAAGAAGAAAAAGAAGTAACACATGAAGAAGAAGAAAAAAGTAACA 1389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAGTAACACATGAAGAAGAAGAAGAAAAAGTAATACATGAAGAAGAAAAAGAAGAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGAA 7947
                                                                                ĠŖĀĠŖĀĠŖĀĠŖĀĀĀTĠŦŖĀĊAŦŔŦĠŖĀĠŖĀĠŖĀĠŖĀŖĀŖĀŖĀĠŢŖĀĊŔĊŔŤĠŔĀĠĀŖĠĀŖ
                                                                                                                                                       GTAACACATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAGAAAAAGTAACACAT
                                                                                                                                                                                            GTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACT
```

1869 8655 1749

1809

1689

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 34
E10126
LOCUS
DEFINITION
                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                  밁
                                         Ş
                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                          Query Match
Best Local Similarity 43.:
Matches 748; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND GENE RECCOMBINANT VACCINE AGAINST CHICKEN LEUCOCYTOZOON

Patent: JP 1995284392-A 2 31-OCT-1995;
DOUBUTSUYOU SEIBUTSUGAKUTEKI SEIZAI KYOKAI, KITASATO INST:THE
OS None
OC Artificial sequences.
JP 1995284392-A/2
PD 31-OCT-1995
PF 19-APR-1994 JP 1994080643
PF 19-APR-1994 JP 1994080643
PF 19-APR-1994 JP 1994080643
PC C12N15/09,A61X39/015,C12P21/02;
CC topology: Linear;
FH Key Location/Qualifiers
FH Key /organism='Artificial sequences' FT CDS
FT source 1. .3399
FT source 1. .3399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1990
                                                                                                                                                                                                                                                                                                           PT Sc
                                                                                                                                                                                                                                                                                                                                                                                      E10126
E10126.1 GI:22026754
JP 1995284392-A/2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E10126

DNA encoding an immunogenicity refused to maltose-binding protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           D
D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unidentified
                                             AGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGG
                                                                                                           AGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGC 7169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAGAAGAAAAAGTAATGAAGAAG 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTA
                TGAAAACGAAACAACATTATGAAAGAGAAATAATTTATATAGTAGATGATTTACCAGA
                                                                              AMACACMACATCTGAACACGAAATAACAATACCTAATGAAAAACGATATAAAAAACAAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ,H., Nagakuchi,Y., Tanaka,Y. and Fujisaki,Y.
E CLONE MANIFESTING CHICKEN LEUCOCYTOZOON IMMUNOGENIC PROTEIN
GENER RECOMBINANT VACCINE AGAINST CHICKEN LEUCOCYTOZOON
ent: JP 1995284392-A 2 31-OCT-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 3399)
                                                                                                                                                                                                                                                                                                                                                                                                                      feature
                                                                                                                                                                                                                                                                                                                                                       feature
                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۲.
                                                                                                                                                                                                                         /organism="unidentified'
/mol_type="genomic DNA"
/db_xref="taxon:32644"
                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .3399
                                                                                                                                                         1.1%;
                                                                                                                                                                                                                                                                                                                                                        3194.
                                                                                                                                                                                                                                                                                                                                                                                                                      1150.
                                                                                                                                            0
                                                                                                                                                                                                                                                                                                    3219. .3399
/note='sequence
                                                                                                                                                                                                                                                                                                                                                                      /note='immunogenicity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein and an
                                                                                                                                                                                                                                                                                                                                                                                                                                     /note='maltose-binding
                                                                                                                                          Score 104.2; DB 6;
Pred. No. 0.00022;
0; Mismatches 963;
                                                                                                                                                                                                                                                                                                                                      /note='EcoRI adaptor'
                                                                                                                                                                                                                                                                                                                                                                                                     /note='EcoRI adaptor'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product='fusion protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mmunogenicity protein'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein
                                                                                                                                                                                                                                                                                                           derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TANAKA YOSHIO, FUJISAKI YUJIRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of Leucocytozon caulleryi
                                                                                                                                          Indels
                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                      protein'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                    protein'
                                                                                                                                                                                                                                                                                                           from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   maltose-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8822
                                                                                                                                                                            3399;
                                                                                                                                                                                                                                                                                                        pMAL-c
                                                                                                                                          16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PAT 29-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                       ŦŢ
                                                                                                                                                                                                                                                                                                                                                                                                                                       Ę
                                                                                                                                                                                                                                                                                                           vector'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                            1520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8775
                                                                                                                                          5
ş
                              밁
                                                       á
                                                                                            밁
                                                                                                                          ঠ
                                                                                                                                                         문
                                                                                                                                                                                      S
                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1581
8296
                               2599
                                                             8236
                                                                                             2539
                                                                                                                                                         2479
                                                                                                                                                                                                                         2419
                                                                                                                                                                                                                                                         8064
                                                                                                                                                                                                                                                                                         2359
                                                                                                                                                                                                                                                                                                                                                       2299
                                                                                                                                                                                                                                                                                                                                                                                      7948
                                                                                                                                                                                                                                                                                                                                                                                                                     2239
                                                                                                                                                                                                                                                                                                                                                                                                                                                    7888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7230
                                                                                                                                                                               GAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGGTAACAGGTTCTGTA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAGAAGTAACACATGAAGAAATAGAAAAAGAAGAGCATGAAGAAGTAATACATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAAAATCTTACAATCAGCAGG
GGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGA
                                                                                                                                                                                                                                                       -TITGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCA-GATAATGTGAATATG
                                                                                                                                                                                                                                                                                         GAAGAAGAAAAGAAGAAGTAACACATGAAGAAGAAAAAAGAAGAAGTAACACATGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                      AAAGTAACACATGAAGAAGAAGAAAAAAGTAATACATGAAGAAGAAAAAAGAAGAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATGAAGAAGTAATACATGAAGAAGAAAAAGAAGAAGTAACACATGAAGAAGAAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGTAATACATGAAGAAGAAAAAGAAGAAGAAGTAACACATGAAGAAAAAGAAAAAGAAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCGGTA 7827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACATGAAGAAGAAGAAGAAGTAACACATGAAG--AAATAGAAAAAGAAGAGCATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAAGTAACACATGAAGAAATAGAAAAAGAAGAGCATGAAGAAGTAATACATGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACACATGAAGAAAAAAAAAAAAAAGAAGAGCATGAAGAAGTAATACATGAAGAAAAAAAGA 1880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAATGTAGATATTACAACAGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATAGAAAAAGAAGAGCATGAAGAAGTAATACATGAAGAAGAAAAAAGAAGAAGTAACACA 1760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGT
                               GAAGAAGAAGAAGAAAAGTAACACATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAA
                                                            GAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAA
                                                                                             CATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAGAAAAAGTAACATATGAAGAAGAA
                                                                                                                                                             GAAGTAACACATGAAGAAGAAAAAGAAGAAGTAACACATGAAGAAGAAGAAAAAGTAACA
                                                                                                                                                                                                                           GAAAAAGAAGAAGTAACACATGAAGAAGAAGAAAAAGTAACACATGAAGAAAAAAAGAA
                                                                                                                                                                                                                                                                                                                       GGAGCAGTAGCAGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTA----
                                                                                                                                                                                                                                                                                                                                                        ATACATGAAGAAGAAGAAGAAGTAACACATGAAGAAGAAAAAGAAGAAGTAACACAT
                                                                                                                                                                                                                                                                                                                                                                                   ATCAATGTCAAAGTGGAAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>AAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAAGAAAAAGAAGAAGTAACACATGAAGAAATAGAAAAAGAAGAGCATGAAGAAGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAACA 7647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACAGTGGCAGTT--ACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAAGAAATAGAAAAAGAAGAGCATGAAGAAGTAATACATGAAGAAGAAAAAAGAAGAAGT 1820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAAT 7409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTAAATGTAGAAGAATCAGATGAAACAGAACATATAACATATGAAATAGATAATGACAT
                                                                                                                           ---TTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTA
8355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1940
                               2658
                                                             8295
                                                                                             2598
                                                                                                                             8235
                                                                                                                                                                                             8178
                                                                                                                                                                                                                                                           8121
                                                                                                                                                                                                                                                                                                                        8063
                                                                                                                                                                                                                                                                                                                                                        2358
                                                                                                                                                                                                                                                                                                                                                                                        8007
                                                                                                                                                                                                                                                                                                                                                                                                                      2298
                                                                                                                                                                                                                                                                                                                                                                                                                                                    7947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7289
                                                                                                                                                             2538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7349
```

```
RESULT 35
AC122056
LOCUS
                                                                                                                                                                                                           TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                        JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                               REFERENCE
AUTHORS
TITLE
                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /ERSION
                                                                                                                                                                                            JOURNAL
                                                                                                               JOURNAL
                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8536
                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus (house mouse)
Mus musculus
Mus musculus
Eukaryota, Metazoa; Chordata, Craniata, Vertebrata, Euteleostomi,
Eukaryota, Metazoa; Chordata, Craniata, Glires, Rodentia,
Mammalia, Eutheria, Euarchontoglires, Glires, Rodentia,
Sciurognathi, Muroidea, Muridae, Murinae, Mus.
Submitted (11-OCT-2002) Genome Sequencing Parkway, St. Louis, MO 63108, USA 6 (bases 1 to 179685)
                                                                                                                                           Submitted (21-MAY-2002) Genome Sequencing Parkway, St. Louis, MO 63108, USA 4 (Dases 1 to 179685) McPherson,J.D. and Waterston,R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HTG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AC122056
Mus musculus
                                                            Submitted (25-AUG-2002) Genome Sequencing Parkway, St. Louis, MO 63108, USA 5 (Dases 1 to 179685)
MCPherson,J.D. and Waterston,R.H.
                                                                                                                                                                                                                                                                                                                                        Kyung, K., Doebber, A. and Kim, K. The sequence of Mus musculus BA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AC122056
AC122056.4
                                                                                                                                                                                                                          3 (bases 1 to 179685)
McPherson, J.D. and Waterston, R.H.
                                                                                                                                                                                                                                                          Sequencing of Mus musculus 
Unpublished (2001)
                                                                                                                                                                                                                                                                                            Wilson, R.
                                                                                                                                                                                                                                                                                                                       Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence.
                                                  Direct Submission
                                                                                                                              Direct Submission
                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGG 8822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATATTTTCAGAAGTCAAT 8475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAAAAGTAACACATGAAGAAGAAAAAAGTAACACATGAAGAAGAAGAAAATGTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAGAAGAAGAATGTAACATATGAAGAAGAAGAAGAAAAAGTAACACATGAAGAAGAA 3018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAAGCTTTGGCTAAAAAATGAAAATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTAACACATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAGAAAAAGTAACACAT 2958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGT 8535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATGAAGAAGAAGAAGAAAAGTAACACATGAAGAAGAAGAAGAAAAAGTAATGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 179685)
                                                                                                                                                                                                                                                                                                         (bases 1 to 179685)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      179685 bp
BAC clone RP24-466A3
                                                                                                                                                                                                                                                                                                                                         BAC clone RP24-466A3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA
from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         chromosome
                                 Center,
                                                                                                               Center,
                                                                                                                                                                                              Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3185
                                                                                                                4444
                                   4444 Forest
                                                                                                                                                                                               4444 Forest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ROD 13-NOV-2003
                                                                                                                  Forest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8415
                                   Park
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3078
```

```
COMMENT
                                                                                                                                                                                                    AUTHORS
TITLE
JOURNAL
                                                                                                                                     Submitted (13-NOV-2003) Department of Genetics, Washington University, 4444 Forest Park Avenue, St. Louis, Missouri 63108, On Oct 11, 2002 this sequence version replaced gi:22476311.
                                                                                                                                                                                                                            Wilson, R.
Direct Submission
Contact: submissions@watson.wustl.
----- Summary Statistics
Center project name: M_BB0466A03
                                                                      Web site:
                                                                                           Center: Washington University Genome Sequencing Center Center code: WUGSC
                                                                      http://genome.wustl.edu
                                                   .edu
                                                                                                                                                                                         USA
```

NOTICE: This sequence may not represent the entire insert of this clone. It may be shorter because we only sequence overlapping clone sections once, or longer because we provide a small overlap between neighboring data submissions.

all regions were double stranded, sequenced with an alternate chemistry, or covered by high quality data (i.e., phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeate; all regions were covered by sequence from more than one subclone; and the assembly was confirmed by restriction digest. This sequence was finished as follows unless otherwise noted:

MAPPING INFORMATION:

Mapping information for this clone was provided by Dr. Wes Warren, Department of Genetics, Washington University, St. Louis MO. For additional information about the map position of this sequence, se http://genome.wustl.edu 8ee

SOURCE INFORMATION:

The RPCI-24 BAC Library has been constructed by Pieter de Jon coworkers (http://www.chori.org) from male C57BL/6J mouse spl and/or brain genomic DNA. The clone and detailed information obtained from Pieter de Jong and coworkers at http://www.chor coworkers at http://www.chori. spleen ion can be Dong and

NEIGHBORING SEQUENCE INFORMATION: This sequence is the entire inser is the entire insert о f the clone

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                     source
repeat_region
                           repeat_region
                                                     repeat_region
                                                                               repeat_region
                                                                                                      repeat_region
                                                                                                                                  repeat_region
                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                           repeat_region
     /rpt_fami
8584. .88
                                                                                                                                                                                                                                         /rpt_family="ERVL'
2081. .2289
                                                                                                                                                                                         3884.
                                                                                                                                                                                                                 /rpt_family="ERVK"
2311. .3896
                                                                                                                                                                                                                                                                                                                                                             /organism="Mus musculus"
/mol_type="genomic DNA"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                               note="Sequence derived
                                                                                                                                                             rpt_family="ERVK"
3919. .4254
                                                                                                                                                                                                  /note="Unresolved simple
                                                                                                                                                                                                                                                                           rpt_family="B4"
                                                                                                                                                                                                                                                                                                      clone_lib="RPCI-24"
                                                                                                                                                                                                                                                                                                                       /clone="RP24-466A3"
                                                                                                                                                                                                                                                                                                                                    /map="14"
                                                                                                                                                                                                                                                                                                                                              chromosome="14"
                                                                                                                                                                                                                                                                                                                                                                                                      .179685
                               t_family="L1"
1. .8384
                                                               _family="MER2_type"
                                                                                                                   _family="L2"
                                                                                          _family="MER2_type"
                                                                                                                                                  from
                                                                                                                                                                                                     sequence
                                                                                                                                                  one
                                                                                                                                                  plasmid subclone."
```

```
repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                   repeat_region
                                                           repeat_region
                                                                                                                                   repeat_region
                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
           repeat_region
                                                                                    repeat_region
                                                                                                          repeat_region
                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
           /rpt_family="ERVL" 40402 . .40578
                                                                                                                                                                                                           /rpt_family="CR1"
37053. .37182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /rpt_1
23799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /rpt_family="MaLR" 9581. .9630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt_family="MER1_type" 9117. .9296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_family="MaLR"
8892. .9116
                                                           /rpt_;
                                                                                                            7rpt 3
                                                                                                                                    /rpt_f
39322.
                                                                                                                                                                                      /rpt_ta
38641.
                                                                                                                                                                                                                                                                                   rpt_family="RMER10A"
                                                                                                                                                                                                                                                                                                                                                          32609
                                                                                                                                                                                                                                                                                                                                                                                                                                                      .rpc_family="MIR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /rpt_1
27955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /rpt
25613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /rpt 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rpt_family="ID"
25018. .25101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /rpt
22306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rpt_family="MaLR"
4785. .1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ig.
rpt_family="ERVL
                                                                                                                                                                        _fami
                                                                                                                                                                                                fami
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _family="ERV1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        family="ERV1"
3. .11367
                                               family="MaLR"
                                                                       family="Alu"
                                                                                               family="B4"
                                                                                                                      family="ERV1
                                                                                                                                               family="MaLR
                                                                                                                                                                                                                                                famil
                                                                                                                                                                                                                                                                   family="L1"
                                                                                                                                                                                                                                                                                                                      _family="ERV1"
                                                                                                                                                                                                                                                                                                                                              family="L1"
                                                                                                                                                                                                                                                                                                                                                                   family="MER1_type"
                                                                                                                                                                                                                                                                                                                                                                                             family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                      family="ERV1"
                                                                                                                                                                                                                                                                                                                                                                                                                                             _family="L2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             fami
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     family="RMER13B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         family="L1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   family="MaLR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   _family="MIR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  family="MaLR'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _family="Ll"
                                                                                                                                                                                                                                                                                                                                                            .32950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .22398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .14580
                                                                                                                                                                                                                                                                                                                                    .33003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .28008
                                                                                                                                                                        ly="Alu"
                                                                                                                                                                                             Ly="B4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          y="MER2_type"
                                                                                                                                                                                                                                               y="MIR"
                                            S
                                                                                                                                            Ş
                                                                                                                                                                      밁
                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                       밁
                                                                                            S
                                                                                                                      밁
                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 1.1%; Score 102.2; DB 9; Length: Best Local Similarity 43.1%; Pred. No. 9e-05; Matches 546; Conservative 0; Mismatches 718; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                        2905
                                                                                                                                                                                                                                              7525
                                                                                                                                                                                                                                                                       2785
                                                                                                                                                                                                                                                                                              7465
                                                                                                                                                                                                                                                                                                                      2728
                                                                                                                                                                                                                                                                                                                                             7405
                                                                                                                                                                                                                                                                                                                                                                     2668
                                                                                                                                                                                                                                                                                                                                                                                                                    2608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7105 GTACGAGAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCA 7164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7165 AATGCAGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACA 7224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7825 GTAGCTGCCGGAGCCATTATCTCAAAAAGCAAAGAATGAAATGAAATTCAGAGGTTGAAATT 788
                                                                                            TCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGAT 7764
                                                                                                                                                                        GAAGGAGAAGAAGGAAGAAGGAAGAAGAAGGAAGAAGGAAGAAGGAAGAAGAAGGAAGAAGGA
                                                                                                                                                                                            TTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTA 7644
                                                                                                                                                                                                                       GCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGAGATACTCAGGGAGAA 7404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGAC 7284
                        GAAGGAGAAGAAGGAGAAGAAGGAGAAGAAGGAAGAAGGAAGAAGGAAGAAGGAAGAAGGA
                                                                                                                                             ACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAAT 7704
                                                                                                                                                                                                                                              TCAGGAACAGTGGCAGTTACAAATATTAAAAAGAAATTCCGGAGTTACTGTTGAAAATTCT
                                                                                                                                                                                                                                                                      GAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCA
                                                                                                                                                                                                                                                                                                                      GGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACA 7464
                                                                                                                                                                                                                                                                                                                                                                    GTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCG 7824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /rpt family="L1"
52447
52447. .52500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /rpt_family="L1"
44302. .44601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /rpt_family="B4"
51513. .51707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /rpt_family="ERVL"
45974. .46176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        41485. .42248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /rpt_family="ERVL" 50709. .50868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _family="B2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           family="Alu"
3. .51512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            family="ERVK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  family="MER2_type"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .45515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .51452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 179685;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                        3084
                                                                                                                                                                                                                                               7584
                                                                                                                       3024
                                                                                                                                                                                                                                                                       2844
                                                                                                                                                                                                                                                                                              7524
                                                                                                                                                                                                                                                                                                                      2784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2547
                                                                                                                                                                        2964
                                                                                                                                                                                                                                                                                                                                                                     2727
                                                                                                                                                                                                                                                                                                                                                                                                                      2667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2607
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 36
AC133034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
RS Mizny, D. Marie., Metzker, M. Lee., Abramzon, S., Adams, C., Alder, J., Allen, C., Allen, H., Alsbrooks, S., Amin, A., Angulano, D., Anjelbechi, V., Aoyagi, A., Ayodeji, M., Baca, S., Baden, H., Baldwin, D., Bandaranaike, D., Barber, M., Barnstead, M., Benahmed, F., Baldwin, D., Bandaranaike, D., Barber, M., Byth, P., Brown, M., Benahmed, F., Blswalo, K., Blair, J., Blankenburg, K., Blyth, P., Brown, M., Bryant, N., Buhay, C., Burch, P., Burrell, K., Celderon, E., Cardenas, V., Carter, K., Cavazos, I., Ceasar, H., Center, A., D'Souza, L., Checko, J., Chevez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Cleveland, C., Dockrell, R., Cox, C., Coyle, M., Cree, A., D'Souza, L., Davila, M. L., Davis, C., Davy-Carroll, L., De Anda, C., Dederich, D., Delgado, O., Denson, S., Deramo, C., Dingh, Y., Dinh, H., Divya, K., Draper, H., Dugan-Rocha, S., Dunn, A., Durbin, K., Duval, B., Eaves, K., Egan, A., Escotto, M., Eugene, C., Evans, C.A., Falls, T., Fan, G., Farsaer, C.M., Gabisi, A., Ganta, R., Garcia, A., Garner, T., Garza, M., Gebregeorgis, E., Geer, K., Gill, R., Graddy, M., Guerra, W., Guevrar, W., Guerra, W., Guevrar, W., Guerra, W., Guevrar, W., Harvey, Y., Havlak, P., Hadaun, S. L., Hodgson, A., Hogues, M., Honlins, B., Howells, S., Hulyk, S., Hume, J., Idlebird, D., Jackson, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3685 GAAGAAG 3691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AC133034 GI:25073581
AC133034.2 GI:25073581
HTG; HTGS PHASE2; HTGS DRAFT; HTGS FULLTOP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC133034 233713 bp DNA linear HTG 19-
Rattus norvegicus clone CH230-61H4, WORKING DRAFT SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sciurognathi; Muroidea; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGGAG 8371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGGA 8364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGAT 8304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAG 8244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGA 8184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAA 8124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTAT 8064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCT 8004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCCTTCTAAAGGAATTGGAAGA 7944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 233713)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HTG 19-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3504
```

á В S 밁 δ 밁 á 밁 δ 밁 ঠ 맑 á 밁 Ś

Ś 밁

```
Jackson, L., Jacob, L., Jiang, H., Johnson, B., Johnson, R., Jolivet, A., Karpathy, S., Kelly, S., Khan, Z., King, L., Kovar, C., Kraft, C.L., Lebow, H., Levan, J., Lewis, L., Li, Z., Liu, J., Liu, W., Liu, Y., London, P., Longacre, S., Lopez, J., Lorensuhewa, L., Loulseged, H., Lozado, R.J., Lu, X., Ma, J., Lorensuhewa, L., Loulseged, H., Lozado, R.J., Lu, X., Ma, J., Maheshwari, M., Mahindartine, M., Mahmoud, M., Malloy, K., Mangum, A., Mangum, B., McLeod, M.P., McNeill, T.Z., Meemen, E., Mangum, B., McLeod, M.P., McNeill, T.Z., Meemen, E., Maniney, S., McLeod, M.P., McNeill, T.Z., Meemen, E., Maniney, S., Morris, K., Morris, S., Munidasa, M., Murphy, M., Nair, L., Nair, L., Morgan, M., Morris, K., Morris, S., Munidasa, M., Murphy, M., Nair, L., Nankervis, C., Neal, D., Newton, N., Nguyen, N., Norris, S., Nankervis, C., Neal, D., Newton, N., Nguyen, N., Norris, S., Nankervis, C., Neal, D., Newton, N., Nguyen, N., Norris, S., Parke, K., Pasterak, S., Paul, H., Perez, A., Perez, L., Pfannkoch, C., Plopper, F., Poindexter, A., Popovic, D., Primus, E., Pul, L.-L., Plopper, F., Poindexter, A., Popovic, D., Primus, E., Pul, L.-L., Plopper, F., Poindexter, A., Popovic, D., Primus, E., Pul, L.-L., Plopper, F., Reily, R., Reily, R., Reily, R., Reily, R., Reily, R., Reily, R., Sanders, M., Savery, G., Scherer, S., Scott, G., Shatsman, S., Shen, H., Shetty, J., Shvattsbeyn, A., Sisson, I., Sitter, C.D., Smajs, D., Snetty, J., Shvattsbeyn, A., Sisson, I., Sitter, C.D., Smajs, D., Shetty, J., Shvattsbeyn, A., Sisson, I., Sitter, C.D., Smajs, D., Shetty, J., Shen, R., Swatek, A., Tabor, P., Taylor, C., Taylor, C., Tohmas, N., Thomas, S., Tingey, A., Trejos, Z., Usmani, K., Valae, R., Walter, B., Wang, J., Warren, J., Warren, R., Weix, N., White, F., Wang, J., Zhao, S., Dunn, D., Von, V., Yu, F., Zhao, S., Dunn, D., Von, V., Wainston, A., Sishth, D.R., Holt, R.A., Smith, D.R., Holt, R.A., Smith, D.R., Holt, R.A., Smith, H.O.,
Submitted (19-NOV-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
On Nov 19, 2002 this sequence version replaced gi:22748196.
On Nov 19, 2002 this sequence version replaced gi:22748196.
The sequence in this assembly is a combination of BAC based reads and whole genome shotgun sequencing reads assembled using Atlas (http://www.hgsc.bcm.tmc.edu/projects/rat/). Each contig described in the feature table below represents a scaffold in the Atlas assembly (a 'contig-scaffold'). Within each contig-scaffold, assembly (a 'contig-scaffold'). Within each contig-scaffold, individual sequence contigs are ordered and oriented, and separated by sized gaps filled with Ns to the estimated size. The sequence contigs within a contig-scaffold that consist entirely of whole genome shotgun sequence reads. Both end sequences and whole genome shotgun sequence only contigs will be indicated in the feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (06-SEP-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA 3 (bases 1 to 233713)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rat Genome Sequencing Consortium.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rat Genome Sequencing Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 233713)
```

TITLE
JOURNAL
REFERENCE
AUTHORS

TITLE JOURNAL

REFERENCE AUTHORS TITLE

JOURNAL

COMMENT

Center project name: KAZP
Center clone name: CH230-61H4
Center clone name: CH230-61H4
Center clone name: CH230-61H4
Center clone name: CH230-61H4
Center clone name: Phrap; version 0.990329
Assembly program: Phrap; version 0.990329
Centensus quality: 217928 bases at least Q40
Centensus quality: 226670 bases at least Q30
Centensus quality: 226670 bases at least Q20
Estimated insert size: 226602; sum-of-centigs estimation
Quality coverage: 8x in Q20 bases; sum-of-centigs estimation Center code: BCM
Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
Contact: hgsc-help@bfcm.tmc.edu Center: Baylor College of Medicine -- Genome Center

NOTE: Estimated insert size may differ from sequence length

203092

202972

8564

8624

8864

8804

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                     202493
                                                                                                                                                                                                                                                                                                                                                                                                          202433
                    8385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      454;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).

NOTE: This is a 'working draft' sequence. It currently
consists of I contigs dags between the contigs
are represented as runs of N. The order of the pieces
is believed to be correct as given, however the sizes
of the gaps between them are based on estimates that have
provided by the submittor.

This sequence will be replaced
by the fished segmence as soon as it is available and
the the fished segmence as soon as it is available and
                                                                                                                                                                                                                                                                                                                                   CGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGA
                AGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGA 8444
                                                  AACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                       AGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGG
                                                                                   ATCTTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTAC
                                                                                                                                                        <u>AAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAA</u>
                                                                                                                                                                                           the finished sequence as soon as it is available accession number will be preserved.

1 233713: contig of 233713 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         end_sequence:BH283619"
232397 233713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="clone_boundary clone_end:Sp6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              end_sequence:BH283618"
complement(231046..23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       organism="Rattus norvegicus"
/mol_type="genomic DNA"
/db_xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="wgs_end_extension
clone_end:Sp6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note="clone_boundary"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="wgs_end_extension
clone_end:T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         clone="CH230-61H4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         lone_en
9. .750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 101.6; DB 1
Pred. No. 9.8e-05;
); Mismatches 803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .231754)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      803;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
=
-
=
-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               available
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                    8144
                                                                                     8384
                                                                                                                                                                                                                             8264
                                                                                                                                                                                                                                                                                                   8204
                                                                                                                                                                                                                                                                                                                                                                                                                                         8084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8024
                                                                                                                                                          8324
                                                                                                                                                                                                                                                                                                                                   202552
                                                                                                                                                                                                                                                                                                                                                                                                       202492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            202432
                                                                                                                                                                                                                                                                202612
                                                                                                                                                                                                                                                            DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                   BX890609/c
                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                     TITLE
JOURNAL
                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                        37
                                                                                                                                                                                                                                                                                                                                                                                                                       203512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            202973
         Direct Submission

Direct Submission

Submitted (29-APR-2004) Wellcome Trust Sanger Institute, Hinxton, Submitted (29-APR-2004) W. E-mail enquiries:

Zfish-help@sanger.ac.uk Clone requests: clonerequest@sanger.ac.uk

On Apr 29, 2004 this sequence version replaced gi:46275351.
                                                                                                                                                      Eukaryota, Metazoa, Chordata, Craniata, Actinopterygii, Neopterygii, Teleostei, Cyprinidae, Danio.
1 (bases 1 to 228713)
                                                                                                                                                                                                                                                                                                             BX890609 228713 bp
Zebrafish DNA sequence from clone
                                                                                                                                                                                                                          Danio rerio (zebrafish)
Danio rerio
                                                                                                                                                                                                                                                                BX890609.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAAACAAGAATATCAAGC 9104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGGAAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGG 8984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGT 8744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTACACAAAAAAATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGA 8504
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCA 9162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGT 9044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCG
code:
                                                                                                                                                                                                                                                                                GI:46878891
                                                                                                                                                                                                                                                                                                             DNA linear VRT 29-APR-
DKEY-56E5, complete sequence.
                                                                                                                                                                                           Ostariophysi;
                                                                                                                                                                                                             Vertebrata;
```

Ś

ş 밁 Ś

밁

S 밁

밁

Euteleostomi;

VRT 29-APR-2004

ঠ

밁 Ş 밁 S 밁 Ś

S 밁

```
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 938;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
152497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               assembly was confirmed by restriction digest, except on the rare occasion of the clone being a YAC.

The following abbreviations are used to associate primary accession numbers given in the feature table with their source databases:

Em:, EMBL; Sw:, SWISSPROT; Tr:, TREMBL; Wp:, WORMPEP; Information on the WORMPEP database can be found at http://www.sanger.ac.uk/Projects/Celegans/wormpep Clone-derived Zebrafish pUC subclones occasionally display inconsistency over the length of mononucleotide A/T runs and conserved TA repeats. Where this is found the longest good quality representation will be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             only a small overlap as described above.

This sequence was finished as follows unless otherwise noted: all regions were either double-stranded or sequenced with an alternate chemistry or covered by high quality data (i.e., phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by at least one plasmid subclone or more than one M13 subclone; and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        During sequence assembly data is compared from overlapping clones. Where differences are found these are annotated as variations together with a note of the overlapping clone name. Note that the variation annotation may not be found in the sequence submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Repeat names beginning 'Dr' were identified by the Recon repeat discovery system (Zhirong Bao and Sean Eddy, submitted), and those beginning 'drr' were identified by Rick Waterman (Stephen Johnson lab, WashU). For further information see http://www.sanger.ac.uk/Projects/D_rerio/fishmask.shtml DKEY-56E5 is from a Zebrafish BAC library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Web site: http://www.sanger.ac.uk
Contact: zfish-help@sanger.ac.uk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    corresponding to the overlapping clone, as we submit sequences with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     submitted.
TGATGAAAAAAGAAGATAAAGAAGTCAATGAAGAGGATGAAGAATAAGTTGATGCAGAAA 152438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAAATATTAAGCAAACAGCAGCAAATGC 7169
                                                                                                                                                                                                                                                                                   GGTTGAAGAAGAAGATGATGATGATGCAAAAAAGGAAAAAGATGAAAAAGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAGAGGTTGAAGAAGAAGAAGGAGATGATGATGCAGAAAAGGAATAAGATGAAGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAGAATAATATCACTTCTACTGGTGGTTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGG 7529
                                                                                              GAAGATGATGCAGTAGAAAATGAAGAACACGATTGAAGATGGAGAAGTTGATGAAGATGA
                                                                                                                                      TAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAATGTAGATATTACAACAGAGGA 7469
                                                                                                                                                                                       TATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAAT
                                                                                                                                                                                                                                                                                                                                  TAACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                  <u>AGAGGTTGAAGAAAATATGATGATGATGATGCAGAAAAGGAATAAAATGAAGATGAAGA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1.0%;
ilarity 43.6%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pIndigoBAC-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /mol_type="genomic DNA"
/db_xref="taxon:7955"
/clone="DKEY-56E5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         organism="Danio rerio"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .228713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               lib="DanioKey"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches 1191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 101.4; DB 5
Pred. No. 0.00011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 228713;
                                                                                                                                                                                                                                                                                                                                                                                                                                   7289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7229
                                                                                                152498
                                                                                                                                                                                            152558
                                                                                                                                                                                                                                                                                        152612
                                                                                                                                                                                                                                                                                                                                                                                    152672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   152732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               152792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                         밁
                                                                                                                                                               δ
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                               밁
                           밁
                                                                   Ś
```

ঠ

밁 ð 밁 ş 밁 १ 밁 Ś 밁 S ₽

밁 á

```
152084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               152203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                151968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      152024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   152143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGTATTTTCAATGAAAAAAAAAAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGAAAT 7949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAACAGC 7649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ÄAGA----AGATAAAGTTGATGAAGAAGATGATGCAGAAAAGGAATAAGATGAAGATGA 152383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGTGATGATGATGAAGAAATTGATGAAGAAGCAGATGATGAGGATGAAGAAGTTAA 152025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTTGATGAAGAAAATCAAGTTAAAGAAGATGCAGAAAGAGTAAAAAATGAAGACGTTGA 152144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAAAAAGAACAATATGATGAAGAAGAATATGATGCAGAAAAGGAATAAGAGGAAGATAA 15220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGÁTGCÁGAAATAGAÁGATGATGCAGAÁAAGGGGÁGCAGATGÁAGATGATGATGATGA 15226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAGTTGATGAAGATGAAGATGCTGAAGAAGA-AGAAAAAAACATGAAAATCATGTAGT 15232
TGAAGATGAAGAAGATGATGCAGAAAAGGATTAAGACAATGAAGAAGATGCAGAAATAGA
                                                                                                               AACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAA 8609
                                                                                                                                                                                                                                                                                                                                                      AGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGA 8429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGATGGAGTTGATGAAGAAGATGAAGTTAAAGAAGATGCAGAAAGAGTAAAAAATGAAGA 151611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGGAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAGGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGTGAAGAAGATGATGCAGAACAGTAATAAGAGGAAGATGAAGAAGTTGATAAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAAGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAACAAGATGAAGAACAGGATGAAGAAAAAGAATATGATGCTGAAAGAAGAAGAATATG 151909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCAGTAGCAGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAAGGTAATGTAGATGATGCAAAAA----AGTAGCAAACGAAGAAGAAGATGATGAAAA 151969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    саатстсаластосалалалалалаласьствастся тспа тестора стептення станост ст
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAAGACGATAAAGAACAAGATGCAGAAATAAAAGATAATGCAGA-AAAGTAGCAGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGATGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGTTGATGAAGAAGAAGAAGAAGATGCAGAAATAGAAGATAATGCAGAAAAAGTAGC 151551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATGATGAAGAAGATGTAGATAATGAAGATTAAGT-TGATCCAGAAAAAGAATAAGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGATGCAGCAAAAAGAAAAGGATGAAGAAGTTGATGAAGAGGAAGAATTTGAAGATGAAGA 151730
                                                                                                                                                                                                                               GGTTAATGAAGGTGATGTAGATGAAGAATAAGTTGATCAAGAAAACAAAGATGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 151671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    151790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                151849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     152085
                  151371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               151491
                                                                                                                                                                                                                                                        151431
```

```
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 38
AF270648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         150952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           151251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   151370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     150772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      151011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               151191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       151310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               150832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  151071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                151131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8849
                                                                                                                                             Submitted (20-MAY-2000) Department University of Medical Sciences, 74 Guangdong 510089, P.R.China
                                                                                                                                                                                                                                                                                                             Plasmodium falciparum
Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.

1 (bases 1 to 4102)
Shan, Z.X., Yu.X.B., Fang, J.M., Li, X.R., Ma, C.L. and Wu, Z.D.
Cloning and expression of the mature parasite-infected erythrocyte
surface antigen gene of Plasmodium falciparum isolate FCC1/HN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AF270648 4102 bp DNA linear Plasmodium falciparum mature parasite-infected ery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        antigen (MESA)
AF270648
                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plasmodium falciparum (malaria parasite P. falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AF270648.1 GI:8468620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ANAATAAAAAAGATGATGAATAAATGATGCTGAAGAAAGAAGAAGAA 150722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAATTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATAAAGACGATGAAGAACAAGATGCAGAAAAATAAAAAGATGAAGAAGATTAAGATGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGATGGAGAAAAGGAATAAGAT - GAAGATGATGTGGAAAAAAAATAAAAGGAAGATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGAAGAAGATGTAGATGAAAAACAATAAGTTGATTTAGAAAAAGAAGAAGAAGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAAGATGATGAAGAATATGATGCTGAAAGAGGAAGAATATGAAGATGAAGAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGATGCAAAATAGTAGCAGAGGAAGAAGAAGAAGATGATGATGATGATGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGG-AAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCAGAAAAAGAACAGGATGTTGTTGATGAAGACGATGAAAAAATAAGGAGAAATAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGATGATGCAGAAAGAGGAGCAGATGAAGAAGAATATGATGAAGGTTGTGAATAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGATGATAAAGAAGATGACGTTAAAAAAGATGCAGAAAGAGTAAAAGATGAAGACGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAA 9088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGG
                                                                                                                                                                                                                                                                     (bases 1 to 4102)
                                                 /organism="Plasmodium falciparum"
/mol_type="genomic אים"
                           /mol_type="genomic_DNA"
/isolate="FCC1/HN"
                                                                                                                       Location/Qualifiers
                                                                                                      .4102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cds
                                                                                                                                                                 of Parasitology, Sv
Zhongshan Road II,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     erythrocyte
                                                                                                                                                                                               Sun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INV 12-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9259
                                                                                                                                                                      Guangzhou
                                                                                                                                                                                          Yat-Sen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               151012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              151311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   150953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           151072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          151132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      151192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     151252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            150773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    150893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8968
Ş
                                               밁
                                                                                         S
                                                                                                                                             밁
                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 572; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sg
                                                                                                                                                                                                                                            2699
                                                                                                                                                                                                                                                                                         7345
                                                                                                                                                                                                                                                                                                                                        2639
                                                                                                                                                                                                                                                                                                                                                                                                                                       2579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2519
  GCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAAT
                                                                                                 ACAGAGGACAAGAATAATCACTTCTACTGGTGGTTTTGGGAACTGCAGGTCTTGCTTCC
                                                                                                                                                                                        GAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGTAGAAGAAGGAATTAAAGAAAATGATACTGAAAGTAAAGATAAAGTGATAGGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTACGAGAAAAAGTAAATGTAACGGCAAAAGAGAGAAAAAAATATTAAGCAAACAGCAGCA 7164
                                                 GATGTTAATGAAAAAGATACCGCAAACAAAGATAAGGTGATAGAACAAGAAAAAAGAAAAA
                                                                                                                                             GCAGGTATTTCTACAGAAGATACTTCT---GTAAAAGCGGATAGAGGAGATACTCAGGGA 7401
                                                                                                                                                                                                                                                                                                                                        GAAGTGATAAAAGGAGATGTTAATGAAGAAGGTCCCGAAAACAAAGATAAAGTGACAAAA
                                                                                                                                                                                                                                                                                                                                                                                       GAAGTTAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTGTAGAAGATAGAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAGATAAAGTGATAGGACAAGAAATAATAGTTGAAGAAGTAAAAGAAGAAATTGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATGCAGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTAAAAAAGTAATTAAAAAAAAAGTAGAAAAAGGAATTAAAGAAAATCATACTGAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.0%;
ilarity 43.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EETKYTKI TSSFRETENVKI TEESKID EGNKVOGGYENSENSINTYSESSETKKLAEKE
ENBOGKLGENVNDGASENSEDPKKLDEGEENTTVKDDKEESEKTKKAEKE
ENBOGKLGENVNDGASENSEDPKKLDEGEETLVKDDAKKKHKELE EANTEKNDUEKKOK
KKKKKS FROMLGCNFLCNKNI ETDDEETLVVKDDAKKKHFLE EANTEKNDOKK
LLGEGDKEDVKEKNDEKOKYLGEGDKEDVKEKNDDKOKVLGEGOKEDVKEKNDK
KKKKKS FROMLGCNFLCNKNI ETDDEETLTVKDDAKKKHFLE EANTEKNDOKK
DKVIGSEKTOKE I KEKVEKRVKEKCKKKVKKGI KENDTEGNDKVKGDEI I EEVKEEI
KKOVEDGI KENDTEGNDKVKGPEI I TEEVKEEI KKOVEGI KENDTENKDKVIGQEI I
TEEVKEEI KKOVEEGI KENDTESKOKLI GOEI I TEEVKEGI KENDTENKDKVIGQEI I
TEEVKEEI KKOVEEGI KENDTESKOKLI OGEI I TEEVKEGI KENDTENKDKVIGQEI I
TEEVKEEI KKOVEEGI KENDTESKOKLI OGEI I TEEVKEGI KENDTENKDKVIGOK
KVIGQEI I VEEVKEE I EKQVEEGI KENDTESKOK VIGQEVI I KENDTENKOKVI EOGK
EKEPKEVKEKOTKNOK VIGQEVI I EEVKEEVKEN VKKENNOKUS VOGEINNE
DVNEKDTESKOKMI GKEVI I EEVKEEVKKEVKKRNOKNERKDVI VGGINGE
DVNEKDTESKOKMI GKEVI I EEVKEEVKKRVNKRNRANEKNERKOVI EQEI V
EESPVEEKDTESKOKMI GKEVI I EEVKEEVKKRVNKRNRANEKNERKOVI EQEI V
EESPVEEKDTESKOKMI GKEVI I EEVKEEVKKRVNKRNRANEKNERKOVI EGESEESEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NYIECLRNAPYIDDPLWGSVVTDKRNNCLQHIKLLEMQASERRRKQQEBENAKDIEEI
RKKEKEYLMKELBEMDESDVEKAFRELQFIKLRDRTRPRKHVNVWGESKETDESKETD
ESKETDESKETGESKETGESKETGESKETGESKETGBSKETGBSKETGBSKETGBSKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EEESEESEESDEEKNTSGLVHRRNCKKEKKYNNGELEEYYKEKQNEEYFDEEYIIQ
SKEHNTLNTFPNMALNEDFRREFHNILSIHEDTDLMELKRILYNLFLEYNPHMNNKQK
AELDKKFSEMNVVHQILNYEERIRMYEENAARGRLNTVILDPIITFNVIFGDDTMFKF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGESKETGESKETGESKETGESKETGESKETGESKETGESKETGESKETGESKVTRIY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="mature
antigen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                antigen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="MESA"
/product
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /trānblation="mevicrnlcydkknnmmenegnkvkkvynnsslkkymkfclcti
icvflldiytncesptygyssiknnndryvrilseteppmslebimrtfdedhlysir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /protein_id="AAF75554.1"
/db_xref="GI:8468621"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="MESA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /country="China"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene="MESA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         product="mature parasite-infected erythrocyte surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .150,281.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 100.4; DB 2;
Pred. No. 0.00064;
0; Mismatches 721;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    parasite-infected
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . >4102)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    erythrocyte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                       7344
                                                                                                                                                                                             7461
                                                                                                                                                                                                                                                                                                                                        2698
                                                                                                                                                                                                                                                                                                                                                                                                                                  2638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2578
                                                                                                                                                2818
                                                                                                                                                                                                                                          2758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ü
```

S 밁 S 밁 Ś

S 밁

밁

ş 밁 ş 뮻 Ś 밁 δ 밁 Ś 밁 Ś 8 Ś

片

```
RESULT 39
CS075468
LOCUS
DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 청 음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          유정
                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3299
                                                                                                                                                                                                                                                                                                                                                                                                                                  3539
                                                            Plasmodium
Plasmodium
                                                                                                           CS075468
Sequence 11 from Patent
CS075468
CS075468.1 GI:63092229
Druilhe,P.
MSP-3-like
                                               Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTTCTAAAGCAGTAACAGGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGTCTGAAGAATCTGAAGAAGAATCTGAAGAAGAATCTGAAGAAGAATCTGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAAAAGAAAGAAGTACAAGAAGAATCTGAAGAAGAGTCTGAAGAAGAGTCTGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATACCAAAAACAACGATAAAAAGATAGGAAAAAGAGTCAAAAAACCAATAGATGATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAATTGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>AAAAATGAAAGAAAGATGTGATAGAACAAGAAATAGTAAGCGAAGAAGTTAACGAAAAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAATTCAGAGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAGAAGTTAAAAAAAGAGTAAACAAAGAAGTTAACAAAAGAGTAAACAGAAGAAATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGAAGCAAAAGGATTAACCGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATTCTAATGGAAGATCAAATATCAGTAT---TAAAAATTCTAAGCTATTAGGAAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAAATGAAAACAAAGATAATGTGATAGTACAAGAAATAATGAACGAAGATGTTAACGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGAAGTAAAAGAGGTTAAAGAAAAAGATACCGTAAACAAAGATAAAGTGATAGGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTCTTATTTGAAAGTTAGTACAAAATCCCGGAAGAAGTATTTTTCATGCAGATAATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAATCTGAAGAAGAAGTCTGAAGAAGAATCTGAAGAAGAAGAAGAATCTGAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTTCTGTAGGAG----CAGTAGCAGGGGAGGGAATTATTTCCGAAGCAAAAGATGCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAAGAGAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                 GAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                  GAATCTGAAGAAGAATCTGAAGAAGAAGTCTGAAGAAGAAGAAGAAGAATCTGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTATTGGGAGGAGTTGGAGTCACCAAGGCAGGAAGCTACTGCTGCAGGTAAAACTATGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAATCTGAAGAAGAGTCTGAAGAAGAATCTGAAGAAGAGTCTGAAGAAGAGTCTGAAGAA
                                                                                                                                                                                                                                                                                                                                  GGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGA
                                                                                                                                                                                                                                                                                                                                                                   GAATCTGATGAAGAAAAAATACATCAGGTTTGGTACATAGAAGAAATTGTAAAAAAAGAA
                                                                                                                                                                                                                                      TITGATGAAGAATATATTATTCAATCAAAAGAACATAATACT
                                                                                                                                                                                                                                                                                                     AAGAAATATAATAATGGAGAATTAGAAGAATATTATAAAGAGAAACAGAATGAAGAATAT
 family
                                            falciparum (malaria parasite falciparum Alveolata; Apicomplexa; Haemo
 얁
 genes
                                              Apicomplexa; Haemosporida; Plasmodium
                                                                                                                                          1701 bp
EP1526178.
                                                                                                                                                            DNA
                                                                               ۳.
                                                                               falciparum)
                                                                                                                                                            linear
                                                                                                                                                                                                                                         3760
                                                                                                                                                                                                                                                                       8397
                                                                                                                                                              PAT
                                                                                                                                                              06-MAY-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3238
                                                                                                                                                                                                                                                                                                                                                                                                      8295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7938
                                                                                                                                                                                                                                                                                                                                                                                                                                     3598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                           밁
                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                 멍
                                                                                                                                                                                                                                                                                                      밁
                   S
                                                 밁
                                                                          Ś
                                                                                                       Ъ
                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 610;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7052 CTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAG 7111
                     7889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Patent: EP 1526178-A 11 27-APR-2005;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Institut Pasteur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ataatttaaatatagaaatgaaataaatacaaattatatatgaagtaacagaagaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     дадалсталатсталссвссалалсяссалалалататталссаласлесавсалатссас
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAATCGGAGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGTAG
                                                                                                                                                                                                                                                                                                                                                                        aagccattgtgaagacttctgatattattggaaaaaatgtagatattacaacagaggaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATCGGAAACTGAAATAGGTGAAGAATTAACTGAAAAAGTAGATGAAAAAGTACCTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAAAATCTTACAATCAGCAGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTTTACTGAAAATAAAGAACAAAAAAATGAAGAAGTACCAATGAAAATAGAAGTAGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGACGAAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGTATTTTCAATGAAGAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGAAA 7948
                                                                                                                 AAGTAGCTGAAGAATTAGTTGAAAAAGTAGATGAAAAAGTAGCTGAAGAAGTAGATCAAA
                                                                                                                                             TTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCGGTAG
                                                                                                                                                                                                ATGGAAGATCAAATATCAGTATTAAAAATTCTTAAGCTATTAGGAAAAAATATTGATGTTA
                                                                                                                                                                                                                                             ATCAAGGTCCTG---TAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTA
                                                                                                                                                                                                                                                                                                                                      AAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAACAGCAT 765:
                                                                                                                                                                                                                                                                                                                                                                                                      CAGTGGCAGTTACAAATATTAAAAGAAATTCCCGGAGTTACTGTTGAAAATTCTTTTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGTAGATGAAAAAGTAGCTGAAGAAGTAGATCAAAAAGTAGATGAAGAAGTAACTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGTAGCTGAAGAATTAGTTGAAAAAGTAGATGAAGAAGTAGCTGAAGAATTAGTTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGATGGAGAAGAAGTAAAAACAGAATATGTATCTGAAAAAATGAGGAAGTAGAAAATA
                                                    AAGTAGATGAAGAAGTAACTGAAGAATTAATTGAAAAAGTAGATGAAGAAGTAACTGAAG
                                                                                  AGGTAGCTGATGAATTAGTTGAAAAAGTAGCTGAAGAATTAGTTGAAAAAAGTAGATGAAG
                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Plasmodium
/mol_type="unassigned
/db_xref="taxon:5833"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. .1701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  note="MSP 3.6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .1701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 98.6; DB 6;
Pred. No. 0.0015;
0; Mismatches 809;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    falciparum'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1701;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       469
```

589

709

649

7471

529

7351 349 7291 289 7231 229 7171

409

7828

Query Match 1.0%; Score 98.6; DB 6; Length 1701; Best Local Similarity 42.8%; Pred. No. 0.0015; Matches 610; Conservative 0; Mismatches 809; Indels 6; Gaps 2; Qy 7052 CTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAG 7111 Qy 10 CTTTAAAAACGAATTTAAGAAATGGATATTTAAATAATATTATATTAATGAAGAA	P., Singh, S., soe Soe, D. and Mejia, P. ke family of genes WO 2005040203-A 11 06-WAY-2005; Pasteur (FR) Location/Qualifiers 1. 1701 /organism="Plasmodium falciparum" /mol_type="unassigned DNA" /db xref="taxon:5833" 1. 1701 1. 1701 1. 1701 1. 1701	RESULT 40 CS082924 CS082924 CS082924 CS082924 CS082924 CS082924 PAT 18-MAY-2005 ACCESSION CS082924 VERSION CS082924 VERSION CS082924 REYWORDS SOURCE Plasmodium falciparum (malaria parasite P. falciparum) CNGANISM Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.	CAGAAG 8470 	⊢	Db 1310 TAGATGAAGAAGTAGCTGAAAAGTAGTTGAAGAAGAAGTAGTTGAAGAAGTACCTGAAGAAG 1369 Qy 8306 AAGATAAAGTAACTGCTAAATCTTCTTGTAGTATCAGGAAATGGAGGAGGAGGAGGACGAGGAGGAGGAGGAGGAGGAGGAG	QY 8189 TTGGAGTCACCAAGCCAGAAGCTACTGCTGCAGGTAAAACTATGGAAGTTTGAGGAAG 8248	8129 CACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAG	QY 8009 GAGCAGTAGCAGGAGCAATTATTTCCGAAGCAAAAGATGCCGAAGCTCTTATTTGA 8068 C	950 AATTA 7949 TCAAT 1010 AAGTT
B & B & B &	B & B & B & S	D	Db Qy	d VQ	D Q Db	& & &	D & 6	\$ & B &	Db dd
8069 AAGTTAGTACAAANTCCGGAAGAAGTATTTTCATCAGATAATGTGAATATTGAAAGCAA 8128	AGAGTATTTCAATGAAAAATAGAGTAACTAGCCCTTCTAAAGGAATTTGGAAGAGAAAAAAAA	7709 ATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAAATATTTGATGTTA 7768	ATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTA		530 AAGTAGATGAAAAGTAGCTGAAAGAAGTAGATCAAAAAGTAAAGTAAAGTAAACTGAAG 589 7532 CAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTGTGA 7591	7412 AAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGAGACA 7471	7352 TTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGAGAG		170 ATAATTTAAATATAGAAAATGAAATAAATAATACAAATTATAATGAAGTAACAGAAGAAA 229 7172 GAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTGGAACAGCTGTAG 7231

뫄	Ş	뭥	Ş	망	Ş	В	Ş
1490	8426	1430	8366	1370	8306	1310	8249
1490 TAGTTGAAGAACAAGGTGAAAAAGTAAACAAAAATGATTTAAATG 1534	8426 AAGATTATGAAAATAATGATTACACAAAAAAAATATTTTCAGAAG 8470	1430 TACTTGAAGAAGTAATTGAAGAAGTAGTTGAAGAAGTAGCCGAAGAAGTAGCTGAAAAAG 1489	8366 CAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGC 8425	1370 TAGTTGAAGAAGTAGATGAAGAAGTAGCTGAAAAAGTAGTTGAAGAAGAAGAAGGTGAAAAAG 1429	8306 AAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGGAG 8365	1310 TAGATGAAGAAGTAGCTGAAAAAGTAGTTGAAGAAGAAGGTGAAAAAGTACCTGAAGAAG 1369	8249 GAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATG 8305

Search completed: November 25, 2005, 14:17:05 Job time : 31065 secs

THIS PAGE BLANK (USPTO)

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM nucleic - nucleic search,
                                                                                                                                                                                                                                     Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-647-057-8
9726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         November 24, 2005, 22:13:25; Search time 3407 Seconds (without alignments)
19025.771 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                     IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                      4996997 seqs, 3332346308 residues
 10:
12:
13:
                                                                                                                                                                                                                  N_Geneseq_21:*
1: geneseqn198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 atgagcggcatcaaaaataa.....gagaaaaagggaaaaaatga 9726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GenCore version 5.1.6 Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                               geneseqn2003as:*
geneseqn2003bs:*
                                                                                                                                                                                                geneseqn1980s:*
geneseqn1990s:*
                                                                                                                  geneseqn2002as:*
geneseqn2002bs:*
                                                                                                                                                geneseqn2001bs:*
                                                                                                                                                                   geneseqn2001as:*
                                                                                                                                                                               geneseqn2000s:*
               geneseqn2004as:*
geneseqn2004bs:*
                                              geneseqn2003cs:*
geneseqn2003ds:*
geneseqn2005s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sw model
                                                                                                                                                                                                                                                                                                                                                                                        9993994
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

17 18 19	13 c 15	10 11 12	J 4 73 70 F 80	Result No.
79.2 79.2 79.2	87.4 81.8 80.4 79.2	116.2 116.2 104.2 98.6	2780 2322 2141 1887 1130 116.2	Score 9726 9718
000.	0000	1.2 1.1 1.0	23.9 22.0 19.4 11.6	Query Match 100.0
7434 7434 7434	3579 1686 1300 4965	5529 6152 3399 1701	2322 2322 2141 1887 1130 5361	Query Query Match Length DB 100.0 9726 6 99.9 11130 6
4.000	8123	_ N N 6	N D D D D D	, e e E
AAS52179 ABT14965 ACF73459	AAA70099 AAQ87587 ADP85917 ADA89806	ABK50883 AAT78867 AAT05868 ADZ72262	AA167645 AA167643 AA167644 AA167644 AA167641 AA1778868	ID AA167640 AA167647
Aas52179 Staphyloc Abt14965 Pathogen Acf73459 Staphyloc	Aaa70099 Plasmodiu Aaq87587 DNA encod Adp85917 Synthetic Ada89806 Staphyloc	Abk50883 DNA encod Aat78867 P. falcip Aat05868 Chicken l Adz72262 Plasmodiu	Aai67643 F. necrop Aai67643 F. necrop Aai67644 F. necrop Aai67644 F. necrop Aai67684 F. necrop Aai67688 P. falcip	7 7 1 6 6

Fusobacterium necrophorum polypeptide useful as vaccine in immunizing an animal against an infection e.g. foot rot, or liver abscesses caused by the bacterium.

Claim 10; Page 90-95; 108pp; English

WPI; 2002-049245/06. P-PSDB; AAG66005.

Nagaraja TG,

Stewart GC,

Narayanan SK,

Chengappa MM;

25-APR-2000; 2000US-00558257. 24-APR-2001; 2001US-00841786.

(UNIV) UNIV KANSAS STATE RES FOUND.

25-APR-2001; 2001WO-US013240

01-NOV-2001.

	O					ი		ი	ი				ი											
44 45	43	42	41	40	39	38	37	36	35	34	3 3	32	31	30	29	28	27	26	25	24	23	22	21	20
63.2	63.2	63.4	64.4	65.2	65.4	65.8	65.8	66.2	67.6	.67.6	68.2	68.2	68.8	68.8	72.4	72.4	72.4	73.6	74.8	74.8	76	76.4	77	79.2
0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	80	0.8
3095 6644	2407	612	1712	2289	5940	1000	1000	15507	7442	4590	4997	4911	31124	1998	7446	7446	7446	8155	7107	7104	1039	4677	204803	7437
NN	00	14	σ	14	ω	12	12	œ	4	_	œ	œ	11	w	13	10	æ	N	4	4.	14	w	12	4
AAQ03875 AAX33181	ADA89805	ACL64894	ABK50884	ADZ72266	AAA70105	ADQ62832	ADQ62833	AAL53680	AAS46686	AAN60472	ACA47636	ABT15076	ACN44156	AAA70212	ADU74046	ACF05848	ACA19708	AAV74374	AAS54654	AAS51998	ACL64817	AAA70259	ADQ97348	AAS55232
Aaq03875 Sequence Aax33181 Base sequ		Ac164894 M. xanthu	Abk50884 DNA encod	Adz72266 Plasmodiu	Aaa70105 Plasmodiu	Adq62832 Homopoly-	Adq62833 Homopoly-	Aal53680 Genomic D	Aas46686 Tumour su	Aan60472 Sequence			თ	Aaa70212 Plasmodiu	Adu74046 Staphyloc	Acf05848 Methicill	Aca19708 Prokaryot	Aav74374 Staphyloc	Aas54654 Staphyloc			Aaa70259 Plasmodiu	Adq97348 Mouse can	Aas55232 Staphyloc

ALIGNMENTS

```
RESULT 1
AA167640
ID AA167 AA16
XX AA16
XX AA16
XX AA16
XX Leuk
XX Leuk
XX Fur
XX For
COS Fur
XX Fur
XX V COS
FT CDS
FT C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Leukotoxin; infection; immunisation; liver abscess; foot rot; bactericide; vaccine; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F. necrophorum leukotoxin protein encoding DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAI67640;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAI67640 standard; DNA; 9726 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fusobacterium necrophorum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200180886-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
1. .9726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag= a
/product= "leukotoxin"
```

```
밁
                                                         Ś
                                                                                      밁
                                                                                                                                                                Ş
                                                                                                                                                                                                                       중 음 성
                                                                                                                Ş
                                                                                                                                            밁
                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                         음 성
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SSSSSSSSSSSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 9726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention provides an isolated Fusobacterium necrophorum leukotoxin polypeptide and its truncated versions. The leukotoxin protein can be expressed by standard recombinant methodology. The leukotoxin gene is useful for preparing a vaccine which confers effective immunity against infection caused by F. necrophorum. The vaccine is useful for immunising an animal against liver abscesses caused by F. necrophorum and for preventing foot rot caused by F. necrophorum infection. The present sequence represents a DNA encoding a F. necrophorum full-length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  leukotoxin polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Simi
        841
                                                         781
                                                                                                                                              661
                                                                                                                                                                        661
                                                                                                                                                                                                    601
                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                 781
                                                                                         721
                                                                                                                  721
                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                      CAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA
                                                                                                        TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTCAGCTCACATAGATTCTCCT
                                                                                                                                                               ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT
                                                                                                                                                                                                                                                                         ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC
                                                                                                                                                                                                                                                                                                             GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA
                                                                                                                                                                                                                                                                                                                               GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGGTAAATAATCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGGATATCAGATTCTAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9726 BP; 3678 A; 1304
     AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT
                               CAAAAAGCTATGGGAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAAGGA
                                                                                      TTAAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCT
                                                                                                                                            ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT
                                                                                                                                                                                                                      ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT
                                                                                                                                                                                                                                                        ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC
                                                                                                                                                                                                                                                                                                                                                                   ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG
                                                                                                                                                                                                                                                                                                                                                                                  ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTTTGTCAATGGAAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACTTTGTCAATGGAAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTTAATAGATTTTGCTTTTAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCGCGACTGAGAATTTTTGGAACAAAAATAGAAAAAAGGATAATGTTTATGACATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 9726;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ć;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      T; 0 U; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                          840
                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                              660
                                                                                                                                                                                                                                                       600
                                                                                                                                                                                                                                                                                  600
                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
                                 840
                                                                                                                 780
                                                                                                                                            720
                                                                                                                                                                        720
                                                                                                                                                                                                   660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                      780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
               Ś
                                     문
                                                                Ş
                                                                                                 밁
                                                                                                                     Ş
                                                                                                                                                 밁
                                                                                                                                                                             δ
                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                 멂
                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                             昂
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                  1921
                                             1861
                                                                       1861
                                                                                                   1801
                                                                                                                                                        1741
                                                                                                                                                                                   1741
                                                                                                                                                                                                                1681
                                                                                                                                                                                                                                          1681
                                                                                                                                                                                                                                                                     1621
                                                                                                                                                                                                                                                                                               1621
                                                                                                                                                                                                                                                                                                                                                                                                                                     1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1441
                                                                                                                             1801
                                                                                                                                                                                                                                                                                                                          1561
                                                                                                                                                                                                                                                                                                                                                    1561
                                                                                                                                                                                                                                                                                                                                                                               1501
                                                                                                                                                                                                                                                                                                                                                                                                         1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   901
GATGATGTAAATGTGAGAAGTGAAGCGATTAATTCCATTCGAGCTGCTGTAAAAAGGTGGA
                                             GGAGGAGACAGTGTCAATGAGGAAATAAAGAATAAGCTAACGAACTTATTTAGTGTCGGT
                                                               GGAGGAGACAGTGTCAATGAGGAAATAAAGAATAAGCTAACGAACTTATTTAGTGTCGGT
                                                                                                   GATCACGTTTATGAATCAGGTCATCTAAAATCAATTTTAGATGCAATAAAACAGCGGTTT
                                                                                                                       GATCACGTTTATGAATCAGGTCATCTAAAATCAATTTTAGATGCAATAAAACAGCGGTTT
                                                                                                                                                                            ATTACTAAAAATAGTGTTCTGCAAACAGGATCTGATTTTGGGAACTTCCAAGTTTTATGAAT
                                                                                                                                                                                                                                     CGTATAGATGTAGATGGATATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAAC
                                                                                                                                                                                                                                                                                                                                                                                                  GAAGGAGAAAATAAATCTTCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTGTTTCTGTTGGAACGATGAGAGATTCCAATAAAGTAGCTCTTTCAGTATTGGTGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGTAAAATCGAAGGGAAGAGAGATATTACTTCAAAATCTGAAAATACTATTGATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGCAACAGAAGGAAAGGCAAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGATTTTTAGGTTTATTGACAAGTAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCCTATCAATTTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTACTAAAAATAGTGTTCTGCAAACAGGATCTGATTTGGGAACTTCCAAGTTTATGAAT
                                                                                                                                                                                                                CGTATAGATGTAGATGGATATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAAC
                                                                                                                                                                                                                                                                                               TTGGGGGATAGTGGTAATGGGGTTGTGGCTGCAAATATTTCTAACTATAATGCTTCCTCC
                                                                                                                                                                                                                                                                                                                         GATGATGTAAATGTGAGAAGTGAAGCGATTAATTCCATTCGAGCTGCTGTAAAAGGTGGA
                                                                                                                                                                                                                                                                                                                                                                               GAAGGAGAAAATAAATCTTCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTGTTTCTGTTGGAACGATGAGAGATTCCAATAAAGTAGCTCTTTCAGTATTGGTGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGTAAAATCGAAGGGAAGAGAGATATTACTTCAAAATCTGAAAATACTATTGATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCAGTATCGGAGCGGGATATATTTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCAGTATCGGAGCGGGATATATTTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGCTACTTCTCCATTAAAAATTACCAATTTATATTTGGAGAAAGCCAATGGAAAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGCTACTTCTCCATTAAAAATTACCAATTTATATTTTGGAGAAAGCCAATGGAAAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAGCAACAGAAGGAAAGGCAAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGATTTTTAGGTTTATTGACAAGTAAGTCCAGTGTCGTTATTGGAAAAAGATGCCAAAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCTATCAATTTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGGAAAAAAGAAACTTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGGAAAAAAGAAACTTATAAC
                                                                                                   1860
                                                                                                                             1860
                                                                                                                                                                                   1800
                                                                                                                                                                                                                1740
                                                                                                                                                                                                                                          1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1020
                                                                                                                                                        1800
                                                                                                                                                                                                                                                                     1680
                                                                                                                                                                                                                                                                                               1680
                                                                                                                                                                                                                                                                                                                                                                               1560
                                                                                                                                                                                                                                                                                                                                                                                                           1560
                                                                                                                                                                                                                                                                                                                                                                                                                                     1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1080
                                             1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
```

2881 GAATTATCAGGAGAAATATTAATGCAGATGCATTGAACAGACTTTTTCATGTAGCGGGA 2940	761 GTGAATTTAGTTGGAAATATTGGACTTGCGAGAAGCAGTACATCCGGAAGTGCAGTCGGA	N N N N	521 TTTTCAGAAGGATTGAGTGGACTGATTAAAGAAACTTTGAATTTTACAGGAGTAGGAAAT 25	4 4 4 11 11	221 281 281 281 341	101 GGAAATGCAGCAGTITTTTAIGGAAACTAIAAAATAATGCTICTGTGAAAATTGCAATTGCAATATGCAATATGCAATATGCAATATGCAATATGCAATATGCAATATGCAATATGCAATATATAT	41 CGAGCGACTACGTCAAGTGGAAGTGGAGGCTGTACGAAAGGAAAGAAA	1921 GTGTCTGCAACCATAGCAAATCATAATAATTCTGCTTCTGTGGCAATAGGAGAGAGA
D 04 D D D D D D D D D D D D D D D D D D	Q B Q B Q	D Q D Q	Db Qy	Db Oy	D QY	20 D 20 D 20 D	D Q D Q	Qy VQy
3961 GTGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGCAATCTGAAAGC 4021 CAAAAAATGGAATGTTCTGCTAACAGTCAGAGCGGACAATCTGAAAGC 4021 CAAAAAATGGATGTTCACTGCTTATCAAGCGGACACCCAAGTGACAGGAGCTTTA 4080	3841 AAAGTACAATGCTTTGAGTGGAGCAAAATCAGAACKGCAGGAGAGAAATCTGAAAGC 3841 AAAGTACAATGCTTTGAGTGGAGGAACTCCAAGTACCAGCAGGAGCAGGAGCAGGTTTGGAAAGCAGTT 3900 3841 AAAGTACAATGCTTTGAGTGGAGGAACTCCAAGTAGCAGCAGGAGCAGGTTTCGAAGCAGTT 3960 3901 AAAGAAAGTGGAGGACAAAAAAAAATCAGAAAACTTCTATTGGGAACTTCTATCAACTTA 3960	721 ATTGGAAGTGGAAATAGCAACATCAGTGCTGGTTTAGCTGGAGCGGCTGCTGTAAATAAT	3601 GCTGTCGTAGATGAGGTAAAGATTTGAAGGGCAATAAAAAGGTGACT 3660	81 GGAGTAAAAAAGCGGGGAATCTTCCTTCGAACGTTTCTCATACTCCCGATAAAGGACCG	3361 TCAGAAGAACAAGACCAGAGGGATTTTTTTGGCAAAATCGGAAACAAAGTGGACTCTGTAAAA 3420	3241 GTAACAGTAACTGCGGAATCTTTAGAAGTAGATGCAAAAACGACCGGAACAATCAACAGT 3300	3121 ACGAAAAATGCGGCGGTCGGGGTTGCTGTTGCGGTAAATGATTATGATATTTCAAACAAA	3061 GCTTTAAACAGTAAGAATGATACTTCTGTTTGGAATGCTGCCGGTTCAGCGGGAATCGGA 3120

8 8 8 8 8 8 8 8 8

6301 CATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTAGGTAG		5221 ATTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACA 5280
ATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAA	Db	5161 GAGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAGATCAAAAAACATAAATACA 5220 5161 GAGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAGATCAAAAAAACAATAAATA
6181 AAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAAT 6240 6241 ATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAA 6300	Q Db	GGAGGAATGGTATCTGTCAATCGTGGTTCTGATGAAACGGAAGCTTTAGTTAG
6181 AAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAAT 6240	φ	
6121 AAAAGAAAATAAGTAATAAAAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTA 6180	Qy db	
6061 GTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAA 6120 	Dβ	4981 GGAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGAAT 5040
AAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTATATTACTACTCAAGGGCAA 	d dd	4921 GCGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAACCTCTGCTTTGATTACA 4980
GCAGCAATAGGAACCTCAACCAGTGTGAATGAATTACAGGATCTACAAAAGCATATGTA	φ φ γ	4861 GCAAATAATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTACG 4920
ATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGT	δ - 46 84	4801 AATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGAAC 4860
821 AATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTT	φ φ γ	4741 CTTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCA 4800
761 GCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTA 5	B &	4681 GCGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTAATGCGGCTTCTGGA 4740
/01 GIACGAAAIGCITIGGIAAAAAGCAAAICICATICATCITIAAAACAAITIGGAAITIGGA 	}	4621 AATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGAGA
641 GIAGGAGITAAIAAAATIACACAAAAATACTICGGACATATAAAAAATACAGTACTICAAAAT 	}	4561 TCGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAA 4620
GTGGTCACAAATGCGACAGTGCTTTCCGGAGCAGTGGACAGCTGCAGTAGGAGCTGGA) B (2)	4501 AAGGAACAACTAGAAAAAGCAAAGAAAAAAAGAAGAGCGGTCATTGTAAATGCTGCTTTA 4560
GAAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAA) B 6	4441 AAAGATAAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATACG 4500
TOWN LANGE CHEET LECTIC LICE TO THE PROPERTY OF THE PROPERTY) B Q	4381 GCCAAAGATGTCAAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTACTAAATGGA 4440
GCAGTCGGAGTTGGAGGAGCAGAAAGGAGCCTCTGTGCAAGGAGCTTCTGCCAAGTACTACCT	S B S	4321 GACGTGGAAGCTAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCATT 4380
GATCAAGATAGAAAAATATCAATGTGACTGCAAAAGATTATGACCAATACTATA) B &	4261 AGTTCTGGAGCGGGATTAGGAAATTATCAAGGGGCTGTTTCTGTCAATAAGATTGACAAT 4320
AATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAAAAATTACAACGGCGAAT	g 49	4201 GCAAAAGCTCTTTTAGCAACCACTCAAGTGACTGCTGCAGTGACGACGACGGAGGACAATT 4260
	D B	4141 AACAACAAAGTAAATGCTTCTATTAGTGGTGGAGATATACTAACGTTAATCGAGCGGAC 4200

8401 GAATCCGTAGTICGTTIACGAAAGCAAGATTAIGAAATAATGATIACGAAAAAAAAAA
8161 GCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCA 8220

```
9601
                                                                                                                                                                                                                                                              9421
                                                                                                                                                                                                                                                                                                              9421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8641
                                                                                                                                                                                                                                                                                                   TATGCCGGATATGATAAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGAT 9480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGGTGGCTGAAGAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA 9360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAATTCAAAAAATAATAATTACTTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCAT
AAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCAT
                                                                                                   TTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAAT
                                                                                                                                                                                                        GCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAA
                                                                                                                                                                                                                                                         TATGCCGGATATGATAAAAATTATAATATAAGAAAAGACAAATTCTAAGGCTATTGCGGAT
                                                                                                                                                                                                                                                                                                                                                                                            AATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTA 9420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAATTCAAAAAATAATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGAAGCCAAAATCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGTGGCTATGGTGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAAATACAATTTCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAATGAAAATTATGGAAATGTAAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAAATGAAAATTATGGAAATGTAAAAAGGAACTGGAAGAGCCCTTAGTCGGAGCGGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAGCGGTAGCCGGTGTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAG
                                                                                                                                                                                                                                                                                                                                                              AATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTAGCGGTAGCCGGTGTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 9120
                                                                                                9600
                                                                                                                                                      9540
                                                                                                                                                                                                                                                           9480
                                                                                                                                                                                                                                                                                                                                                              9420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8700
  9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8880
```

8 8 8 8 8 8 8

S

ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTATGACATTACT 180

중 음 중

음 성 음

Ş

음 성 음

& B & B

중 유

S

음 성

8 8 8 8 8 8 8 8

```
RESULT 2
AAI67647
ID AAI6
XX AAI6
AC AAI6
XX AAI6
XX AAI6
XX AAI6
XX Leuk
XX Leuk
XX Fusc
PN WO20
XX Fusc
PN WO20
XX Pusc
PN WA25-A
PF 25-A
PR 25-A
PR 24-A
PR 24-A
PR 24-A
PR 24-A
PR 24-A
PR 24-A
PR 25-A
PR 24-A
PR 24-A
PR 25-A
PR 25-A
PR 24-A
PR 25-A
PR
문
                                          Ś
                                                                                                        밁
                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                    The invention provides an isolated Fusobacterium necrophorum leukotoxin polypeptide and its truncated versions. The leukotoxin protein can be expressed by standard recombinant methodology. The leukotoxin gene is useful for preparing a vaccine which confers effective immunity against infection caused by F. necrophorum. The vaccine is useful for immunising an animal against liver abscesses caused by F. necrophorum and for preventing foot rot caused by F. necrophorum infection. The present sequence represents the F. necrophorum full-length leukotoxin gene
                                                                                                                                                                                                                                                                                                                    Sequence 11130 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fusobacterium necrophorum polypeptide useful as vaccine in immunizing an animal against an infection e.g. foot rot, or liver abscesses caused by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2002-049245/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25-APR-2000;
24-APR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fusobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bactericide; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F. necrophorum leukotoxin gene sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAI67647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (UNIV ) UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25-APR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200180886-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Leukotoxin;
                                                                                                                                                                                                                                         Local Similarity
     1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9601
                                                                                                                                                                                                              9721;
                                                     61
                                                                                                                                        ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGGATATCAGATTCTAAAAAAA
                                        GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                           ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            standard; DNA; 11130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAATGA 9726
                                                                                                                                                                                                         99.9%;
nilarity 99.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Page 102-107; 108pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   infection; immunisation; liver abscess;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-00558257
2001US-00841786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KANSAS STATE RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001WO-US013240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Stewart
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              necrophorum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9726
                                                                                                                                                                                                                                                                                                                 4205 A; 1472 C; 2511 G; 2942 T; 0 U;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ,
ც
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Narayanan SK,
                                                                                                                                                                                                           Score 9718; DI
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BP
                                                                                                                                                                                                                                                                 멾
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chengappa
                                                                                                                                                                                                                                                                 6
                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                              Length 11130;
                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         foot
                                                                                                                                                                                                                                                                                                                    0 Other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rot;
                                                                                                                                                                                                              <u>.</u>
                                                     120
                                                                                                           1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9720
     1153
                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9660
```

Ş	<u> </u>	D Q	B &	<u> </u>	중 원	를 원	S & 8	\$ & ;	B 8	문 <i>왕</i>	B & 8	5 5 £	} &	B 성	D Q	B &	음 성	DЬ
1201 GAAGO	1141 GGATT 2174 GGATT	1081 AAGCT				841 AATAC										241 AATAA 1274 AATAA	181 ACAAA 1214 ACAAA	1154 ACCGC
CAACAGAAGGA	rttaggttta tttaggttta	rtgcaaagcac rtgcaaagcac	AGAATGTTGAC AGAATGTTGAC	TTTAAGTTTA	GAAAGCTACA	CAAAGCAAAT	AGCTATGGGA	AGCTACCAAG	TTTTAAAAAT 	TTATATGCG	ATTGAATCCG	AGCCAAACATO	TECTEGTTCT	AGGAAATTTA: AGGAAATTTA:	TGTCAATGGA TGTCAATGGA	TATAGCAAATO	CAAGATTCAAC	
AAGGCAAATAI	TTGACAAGTAJ	TCTTTTAGCT	ATTACAGCTGI ATTACAGCTGI	TCAGATGTGGA	AATGGGAGATT	ATTGAATCTGA	AAAAATTCAAC	ACAAAATCTGG	TTAGTCAATAI	GCGGATATTAG GCGGATATTAG	AATGGAAGCAT	GTAAAGTTTT	TTTCATTCTAT	TATTTCTTAAG	aaaattgaagt aaaattgaagt	CTATATTTTGG	3GGGAGAACGC 3GGGAGAACGC	TTGGAACAAA
TCATTCTTAC	GTCCAGTGTCC	TGTTACAGGT	AGCANAGAATT AGCANAGAATT	AGCTTCCGTAL	TATAAAGAAAC	TGCTGTATTGC	TGTTGGAAAGA	AGATATTATTO	TAGTGATCGAJ	ATTGAAAGATA ATTGAAAGATA	TACGGTAGAAG	TAATGGAATCA	TATTCCAAAAC	CTCGGAAGGA CTCGGAAGGA	AGATGGGATTA AGATGGGATTA	AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAAT 	TTTAACAGTT TTTAACAGTT	
agtggagtaag 	STTATTGGAAA STTATTGGAAA	CTATTTCTCC	TTCTATGATGC	AGAGTAAATAA AGAGTAAATAA	BAAGGGGAAAA 	BAAGCAGATGG	GAATAGAAGA	TTTCAGCTCAG	TAAATTCTGG	CTGCAATACT/ CTGCAATACT/	GAAAATCAA!	TTCCAGTAGA	AAGATGATTT	TGGCAGTAGGI	TCAACGGAATI	GTACGGGGGTA 	TTAATAGATTI TTAATAGATTI	 AGGATAATGTT
GAAGCAACAGAAGGAAAGGCAAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGA	GGATTTTTAGGTTTATTGACAAGTAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGT 	AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCCTATCAATTTAAAT 	GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT 	ACTCCTTTAAGTTTATCAGATGTGGAAGCTTCCGTAAGAGTAAATAAA	AGTIGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGGAGGGAAAAAGAAAG	ARTACCAAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT	CAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA	TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCT	ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT 	ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT 	ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC	GAAGAAGCCAAACATGGTAAAGTTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAAGTAAAA	ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG	ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT 	AACTTTGTCAATGGAAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA 	AATAATCTTTTT AATAATCTTTTT	acaaacaagattcaaggggagaacgcttttaacagttttaatagatttgctttaacagaa 	
GA 1260	TC 1200 	AT 1140 AT 2173	CT 1080 CT 2113	>->	റ—റ					-11				-	NA 360	T 300	AA 240 A 1273	 1213
				<u>.</u>		<u></u>					-	•••						
р <i>г</i>	S & 7	8 B 1	S B S	유 성	Db Qy	B &	g 8	db Qy	B 8	B 8	р Q	B &	B 8	문 첫			B 5	8 ₽
14			2101 GGAAA 3134 GGAAA 2161 CATGC		1981 AGACT 3014 AGACT	1921 GTGTC 2954 GTGTC	1861 GGAGG 2894 GGAGG	1801 GATCA 2834 GATCA	4 1	4 4	4 4	4	1501 GAAGG 2534 GAAGG					2234 GAAGCI 1261 GCAGC
	TCCTTCAAAA	 TGAATTGGTA TCCTTCAAAA	TGCAGCAGTT	GACTACGTCA	TTCTTCAGGA	TGCAACCATA	AGACAGTGTC AGACAGTGTC	CGTTTATGAA CGTTTATGAA	TAAAAATAGT TAAAAATAGT	AGATGTAGATO	GGATAGTGGT/ 	TGTAAATGTG/ TGTAAATGTG/	AGAAAATAAA! AGAAAATAAA!	TTCTGTTGGA/ TTCTGTTGGA/	AAAATCGAAGO AAAATCGAAGO	TATCGGAGCGC	TACTTCTCCAT	aacagaaggaa tacttctccai
	 atggcaaagto aaaactccag <i>i</i>	 TCGGAAGGAAJ ATGGCAAAGTC	TTTATGGAA TTTATGGAAF	AGTGGAAGTGT	TTGGAAGGGAG TTGGAAGGGAG	SCAAATCATAA SCAAATCATAA	AATGAGGAAAT AATGAGGAAAT	CAGGTCATCT	STTCTGCAAAC	GATATCTACA 	ATGGGGTTGT	AGAAGTGAAGC AGAAGTGAAGC	CTTCCGTCAA	CGATGAGAGA CGATGAGAGA	;GAAGAGCAGA ;GAAGAGCAGA	GATATATTTC	TAAAATTAC	AGGCAAATAT TAAAAATTAC
HIII			5 5 5	െ രി—രി	4-4	9-9	<i>≥</i> – ≥	> —>	~~ ~~ ~~	9-9	o−o	െ –	<u> </u>					2 3
HIIIII GATCCG	 TGTTATTGAT ATATGATCCG	 AATTGATATC TGTTATTGAT	TATAAAAT TATAAAAAT VATTGATATC	GCTGTACGA	AATGTAAGG AATGTAAGG	AATTCTGCT	AAGAATAAG AGAATAAG	AAATCAATT AAATCAATT	GGATCTGAT	GCCAAGAAG GCCAAGAAG	GCTGCAAATI	ATTAATTCC	ATTGCTAAA ATTGCTAAA	TTCCAATAAA TTCCAATAAA	CATTACTTCA	GCAAAAAGT/	 PARTTTATATI	ATTCTTAC <i>I</i> ATTTATATT
			TATAMAMIATICTO CONTROL OF THE CONTRO	GCTGTACGAAAGGAAGAAA 	AATGTAAGGGCATTAAATGI AATGTAAGGGCATTAAATGA	AATTCTGCTTCTGTGGCAA1 	AAGAATAAGCTAACGAACTI AAGAATAAGCTAACGAACTI	AAATCAATTTTAGATGCAA1 AAATCAATTTTAGATGCAA1	GGATCTGATTTGGGAACTTC	GCCAAGAAGCGACTAAATGI	GCTGCAAATATTTCTAACTA	ATTAATTCCATTCGAGCTGC	;ATTGCTAAAGGAGCAAAAGT ;ATTGCTAAAGGAGCAAAAGT	TTCCAATAAAGTAGCTCTTTC TCCAATAAAGTAGCTCTTTC	ATTACTICAAAATCIGAAAA			ATTCTTACAGTGGAGTAAG ATTTATATTTGGAGAAAGC
			GGAANIGCAGCAGITTITTAIIGGAAACIAIAAAAATAAICCIICIGIAACAATIAGGAANIGCAGCAGITTITTAIIGGAAACIAIAAAAATAAIICCIICIGIGACAATIAGCAGAGAGAGAGATTTTTAAIGGAAACTATAAAAATAATAAIGCTTCTGTGACAATTGCCGAT GGAAATGCAGCAGTTTTTTAATGGAAACTATAAAAATAATAATGCTTCTGTGACAAATTGAAAATTTGAATAT CATGCTGAATTGGTATCGGAAGGAAAAAATTGATATCAACAGTGAAAAATAAAAATTGAATAT	CGAGCGACTACGTCAAGTGGAAGTGTGGCTGTACGAAAGGAAAGAAA	AGACTTTCTTCAGGAGTGGAAGGGAGTAATGTAAGGGCATTAAATGAAGCTCAAAATCTT	GTGTCTGCAACCATAGCAAATCATAATAATTCTGCTTCTGTGGCAATAGGAGAGAGTGGA 	GGAGGAGACAGTGTCAATGAGGAAATAAGAATAAGCTAACGAACTTATTTAGTGTCGGT	GATCACGTTTATGAATCAGGTCATCTAAAATCAATTTTAGATGCAATAAAACAGCGGTTT 	ATTACTAAAAATAGTCTTCTGCAAACAGGATCTGGATTTTGGGAACTTCCAAGTTTATGAAT 	CGTATAGATGTAGATGGATATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAAC	TTGGGGATAGTGGTAATGGGGTTGTGGCTGCAAATATTTCTAACTATAATGCTTCCTCC	GATGATGTAAATGTGAGAAGTGAAGCGATTAATTCCATTCGAGCTGCTGTAAAAGGTGGA 	GARGGAGAAATAAATCTTCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACG 	TCTGTTTCTCTTGAAACGATGAGAGATTCCAATAAAGTAGCTCTTTCAGTATTGGTGACG	GAAGTAAAATCGAAGGGAAGAGCAGATATTACTTCAAAAATCTGAAGATACTATTGATGCT 	CTCAGTATCGGAGCGGGATATATTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGA		GAAGCAACAGAAGGAAAGGCAAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGA GCAGCTACTTCTCCATTAAAAATTACCAATTTATATTTGGAGAAAGCCAATGGAAAACTT

8 8 8 8 8 8 8

8 8 8 8 8 8 8 8

3241 GTAACAGTAACTGCGGAATCTTTAGAAGTAGATGCAAAAACGACCGGAACAATCAACAGT 3300	4094 GCTTTAAACAGTAAGAATGATACTTCTGTTTTGGATATGATTACAGCAGGGAATCGGA 4153 3121 ACGAAAAATGCGGCGGTCGGGGTTGCTGTTTGGAATGATTATGATATTCAAACAAA	2941 TCTTTTAATGGTGGCTCAGGTGGGAATGCAATCAATGGAATGGAAGTTATAGTGGAGGT 3000	3794 GTGAATTTAGTTGGAATATTTGGACTTGCGAGAAGCAGTACATCCGGAAGTGCAGTCGGA 3853 2821 GGAAGATTTAAATGTTCAAAGATCGAAAAATTCAGCTATCGTAGAAGCTAAAAAAAGCT 2880	4 4 4 4	2521 TTTTCAGAAGGATTGAGTGGACTGATTAAAGAAACTTTGAATTTTACAGGAGTAGGAAAT 2580	2341 TTATTGAATGCATTTTCAGAAAAATTGGATGGAAAACCGGAGCTTTTACTAAATGGTGAA 2400
Oy 4321 GACGTIGGAAGCTAAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCATT Db 5354 GACGTIGGAAGCTAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCATT Oy 4381 GCCAAAGATGTCAAAGGAAGTTCTAGCAAAAGAATATCAGGCTTTACTAAATGGA	5174 4201 5234 5294	Oy 4021 CARANATGGATGTTGATGTCATGCTTATCARGCGACACCCARGTGACNGGAGCTTTA 4080 Db 5054 CARANATGGATGTTGATGTCACTGCTTATCARGCGGACACCCCARGTGACNGGAGCTTTA 5113 Oy 4081 AATTTACARGCTGGAAAGTCARATGGAACTGTAGGGGCTACTGTTGCCARATTA 4140	3901 4934 4994	حقات مقات مقاطة	Oy 3601 GCTGTCGTAGATGAGTAAAATTTTGAAGGGAGCAAATAAAAAGGTAGAGTGACT 3660	3421 A 4454 A 3481 G 4514 G 3541 T 4574 T

8 8 8 8 8 8 8

유왕

Ş

음 성 음

Ş	B 8	B 8	g Q	B &	B &	B &	B 8	g &	р <i>Q</i>	ρ જ	B &	B &	B 8	B 8	D Qy	유 <i>성</i>	당 <i>Q</i>	DЬ
5581 GTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGA 5640	5521 GAAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAA 5580 	5461 TTGAATAAGACAGTTTCTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAA 5520 	5401 GCAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACC 5460 	5341 GATCAAGATAGAAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATA 5400 	5281 AATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAAT 5340 	5221 ATTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACA 5280	5161 GAGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAGATCAAAAAACAATAAATA	5101 GGAGGAATGGTATCTGTCAATCGTGGTTCTGATGAAACGGAAGCTTTAGTTAG	5041 GATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAATC 5100 	4981 GGAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGAAT 5040 	4921 GCGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTACA 4980 	4861 GCAAATAATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTTCTACG 4920 	4801 AATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGAAC 4860 	4741 CTTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCA 4800 		4621 AATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGGATAAAATTCAT 4680 	4561 TCGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAA 4620	
- ad	od da	Q D	O D S	OV 55 15	S B :	O B :	5 8 4	Q B	Qy Db	o g i	δ B 2	S B 8	O B 4	§ . B . &	\$ B &	D 5	Q B :	O D
	7634 6661	7574 6601	7514 6541	7454 ANGACANGATTCTANGCANGGATTTCCTCTTTTGGAGTCGGAGAGCAGCAGCCGGGGTA	7394									ATTAK AGA ETCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGT	GCTGGAGTTGGAGCTGGAGGAGCTGGAGCTGACAGAGCTTCTGTAGCAGAGAGAG			6614 GTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGA 6673 5641 GTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAAATAGTACTCAAAAT 5700

8714 GAGGCIGGCIAIGCAGAATTAAAATTCTAATGGAAGATCAATATCAGTATTAAAAATTCT 8773 7741 AAGCTATTAGGAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAA 7800	621 GATATTACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATA 7	8534 GGAÁCTGCAGGTCTTGCTTCCGCÁTCAGGÁACAGTGGCAGTTÁCAAATATTÁAÁAGAAÁT 8593 7561 TCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAAGAAAGA	7441 GGAAAAATGTAGATATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTG 7500	7381 GATAGAGAGATACTCAGGAGAAGAAGACATTGTGAAGAGATTCTGTGAAAAGCG 8413 7381 GATAGAGGAGATACTCAGGGAGAAGAAGATTAAAAGCCATTGTGAAGACTTCTGATATTATT 7440	4 ACAGAAGTTTTAAAAACTTTTAGACGAAGTTAACAAAGAACAAGATAAAAAAAGTAAATGAT 8 1 GCTACGAAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCG 7	234 GTCTTGGTAAATAATTTTGGAACAGCTGTAGAAGATAGAAAAAATTTCTGAAGGAAA 261 ACAGAAGTTTTAAAAACTTTTAGACGAAGTTAAACAAGAACAAGAATAAAAAAGTAAA 	4 AAAAATATTAAGCA 1 GTCTTGGTAAATAA 	4 4	GCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATÁGTTCTGTGATAGCTC CACAATAACTCTGAGTTTGACTTCCGTACGAGAAAAGTABAAGTAAATGTAACGGCAAAAA 	7994 GTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTT 8053 7021 GCAGCAGTTACCGGAGTTGGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTT 7080	1 GTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTT 702	1 GCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCTTCTACTGATGTAAAT 696	841 TCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTTCTGTCAATAATATTT	781 ACTCCAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCAGGT	ATTATG 6
QY 8821 GGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAATACAATTTCAGGG 8880	OY 8701 GCAGCCGTTGAAAATTATACAAAGAGTACTACAAGGAGCATTGGTTGCAGGAAATTGGGAA 8760	8641 9674	Qy 8521 TTAGCGGTAGCCGGTCTGCATGCACAAGAAACAAACAATTACGAGATCAAACAAG 8580		8401 9434	8341 GGAAATGGAGGAAGTAATACT 	8281 ATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCA 	8221 GGTAAAACTATGGTAGAAGTTGAGGAAGTAAATTTGTTCAGAACAAATCGATTGAATGCA 	8161 GCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCA 	CATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAA 	QY 8041 GCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCCGGAAGAAGTATTTTT 8100	QY 7981 ACTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAA 8040	QY 7921 AGCCCTTCTAAAGGAATTGGAAGGAAATCAATGTCAAAGTGGAAAAAGAAAAAAAA	Qy 7861 GAAATGAATTCAGAGGTTGAAATTGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACT 7920	Qy 7801 GCAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAAGAAT 7860

유 성 음

8 8 8 8 8 8

```
RESULT 3
AAI67642
ID AAI6
XX AAI6
AC AAI6
XC AAI6
XX 27-E
XX 27-E
XX Leul
KW bact
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                               श्
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                             중 음
                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    중 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                         음 성
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                               밁
             Leukotoxin; infection; immunisation; bactericide; vaccine; truncated; SX;
                                                                                                                 AAI67642
                                                                    27-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10274
                                             necrophorum truncated leukotoxin protein (SX) encoding
                                                                                                                                                                         10754
                                                                                                                                                                                                                    10694
                                                                                                                                                                                                                                                                                                                10574
                                                                                                                                                                                                                                                                                                                                                                                                          10454
                                                                                                                                                                                                                                                                                                                                                                                                                                                        10394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10034
                                                                                                                                                                                                                                                                  10634
                                                                                                                                                                                                                                                                                                                                                                                                                                9421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGTGGCTATGGTGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGAAGCCAAAATCGGA
                                                                                                                                                                                                                                                                                                                                                                             TATGCCGGATATGATAAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA 9360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAATTCAAAAAATAATAATTACTTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGACATGCTATTGTAGAAACTACTGGAAAACCAAGAATATCAAGCATTTACAAGAGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAA
                                                                                                                                                                                                                                                                                AAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCAT
                                                                                                                                                                                                                                                                                                                              TTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                          TATGCCGGATATGATAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAATTCAAAAAATAATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCAT
                                                                                                                 standard;
                                                                                                                                                                                             AAATGA 9726
                                                                                                                                                                                                                                            AAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCAT
                                                                    (first entry)
                                                                                                                                                                         10759
                                                                                                                 DNA:
                                                                                                                  2780
                                                                                                                  ВP
             liver
                                                                                                                                                                                                                                                                                                                                                                                     9540
                                                                                                                                                                                                                                                                                                                                                                                                                                  9480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9973
                                                                                                                                                                                                                                                                                                                                         9600
                                                                                                                                                                                                                                                                                                                                                                                                           10513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9000
                                                                                                                                                                                                                                              9720
                                                                                                                                                                                                                                                                                                                                                                10573
                                                                                                                                                                                                                                                                                                                                                                                                                                                         10453
                                                                                                                                                                                                                                                                                                                  10633
                                                                                                                                                                                                                        10753
```

```
Ś
                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                   δ
                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                      Ş
                                   밁
                                                       र्
                                                                                        밁
                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 2780; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention provides an isolated Fusobacterium necrophorum leukotoxin polypeptide and its truncated versions. The leukotoxin protein can be expressed by standard recombinant methodology. The leukotoxin gene is useful for preparing a vaccine which confers effective immunity against infection caused by F. necrophorum. The vaccine is useful for immunising an animal against liver abscesses caused by F. necrophorum and for preventing foot rot caused by F. necrophorum infection. The present sequence represents a DNA encoding a F. necrophorum truncated leukotoxin protein (SX)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rusobacterium necrophorum polypeptide useful as vaccine in immunizing animal against an infection e.g. foot rot, or liver abscesses caused l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25-APR-2000;
24-APR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fusobacterium necrophorum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (UNIV ) UNIV
                                                                                                                                                                        1099
                                                                                                                                                                                                                              1039
                                                              1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2002-049245/06.
DB; AAG66007.
                                                                                                                                              181
                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                          919
                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                GATGTGGAAGCTTCCGTAAGAGTAAATAAAGGAAAAGTCATAGGAAAGAATGTTGACATT
                                                                                                                                                                                                                                                                                GATGTGGAAGCTTCCGTAAGAGTAAATAAAGGAAAAGTCATAGGAAAGAATGTTGACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ġ,
                                                                                                                                                              TTTAGCTTTGTTACAGGTTCTATTTCTCCTATCAATTTAAATGGATTTTTAGGTTTATTG
                                                                                                                                                                                                                 ACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACTAAGCTTGCAAAGCACTCT
AAAATTACCAATTTATATTTTGGAGAAAGCCAATGGAAAACTTCTCAGTATCGGAGCGGGA 1338
                                                   GCAAATATTCATTCTTACAGIGGAGTAAGAGCAACTATGGGAGCAGCTACTTCTCCATTA
                                                                                         ACAAGTAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGTCGAAGCAACAGAAGGAAAG
                                                                                                            ACAAGTAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGTCGAAGCAACAGAAGGAAAGGAAAG
                                                                                                                                              TTTAGCTTTGTTACAGGTTCTATTTCTCCTATCAATTTAAATGGATTTTTAGGTTTATTG
                                                                                                                                                                                                   ACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACTAAGCTTGCAAAGCACTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Page 96-97; 108pp; English
                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KANSAS STATE RES FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2000US-00558257.
2001US-00841786.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001WO-US013240
                                                                                                                                                                                                                                                                                                                                                                                                                          BP; 1031 A; 362 C; 637 G; 750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .2780
                                                                                                                                                                                                                                                                                                                                                                                  28.6%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gc,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "truncated leukotoxin (SX)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Narayanan
                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                  Score 2780;
; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SK,
                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chengappa
                                                                                                                                                                                                                                                                                                                                                                                                                          T; 0
                                                                                                                                                                                                                                                                                                                                                                                           6;
                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                             U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                               Length 2780;
                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₹
                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               by
```

AAAATTACCAATTTATATTTGGAGAAAAGCCAATGGAAAACTTCTCAGTATCGGAGCGGGA

1278

360

1218

240 1158 180

300

1098

1038

60 978

5 5 5 5 5

3499 AATCTTCCTTCGAACGTTTCTCATACTCCCGATAAAGGACCGTCTTTCAGTTTTGGGAGCT 3558	 8	CCGGATGGAACTTCAAAAACAGGAACTGCTATAGAAATTGCAAACTATGTTCAGGGAGAA 24	~
3439 ATGGATTCATTAACAGAAAAAATTACAAATTACATTTCTGAAGGAGTAAAAAAAGCGGGG 3498	Qy db	GAAAAATTGGATGGAAAACCGGAGCTTTTACTAAATGGTGAAAGAATGACAATTATTCTT	σ <
9 GARTTTTTGGCAAAATCGGAAACAAAGTGGACTCTGTAAAAAATAAAT	d dd	2299 ACTCCAGAATATGATCCGAAAGATATTGAATCTATTGAAAAATTATTGAATGCATTTTCA 2358	σ <
ATTAATAAGGTTGGAAGTAAACCGAGTGAAGAAAACGGAAATCAGAAGAAGAACAGAGA 	Qy Db		σ <
TCTTTAGAAGTAGATGCAAAAACGACCGGAACAATCAACAGTATTCTTGTTGCCGGAGGA	Q y db	GAAGGAAAAATTGATATCAACAGTGAAAATAAAATTGAATATAAAAATCCTTCAAAAATG 2 	σ <
	Qy dd	19 TATGGAAACTATAAAAATAATGCTTCTGTGACAATTGCCGATCATGCTGAATTGGTATCG 2	σ <
	da Vo	GGAAGTGTGGCTGTACGAAAGGAAGAAAAAAAAACTTATTGGAAATGCAGCAGTTTTT 2	o <
9 GATACTTCTGTTTGGAATGCTGCCGGTTCAGCGGGAATCGGAACGAAAAATGCCGGCGGTC 	da Vo	GAAGGGAGTAATGTAAGGGCATTAAATGAAGCTCAAAATCTTCGAGCGACTACGTCAAGT 2	σ <
TCCATTGATGACGAAGCATATTTGAAACCTAATAAAAAATTGCTTTAAACAGTAAGAAT	QY dd	1939 AATCATAATAATTCTGCTTCTGTGGCAATAGGAGAGAGTGGAAGACTTTCTTCAGGAGTG 1998 	0 4
GTTGGGATTGCAATCGAATGGGAAGTTATAGTGGAGGTATCAGTAGGCAAGAGTT	d dd Yy	1879 GAGGAAATAAAGAATAAGCTAACGAACTTATTTAGTGTCGGTGTGTCTGCAACCATAGCA 1938 	σ <
ATTAATGCAGATGCATTGAACAGACTTTTTCATGTAGCGGGATCTTTTTAATGGTGGCTCATTTAATGGTGGCTCATTTAATGGTGGCTCATTTTAATGGTGGCTCATTTAATGGTGGCTCATTTAATGGTGGCTCA	, B &	1819 GGTCATCTAAAATCAATTTTAGATGCAATAAAACAGCGGTTTGGAGGAGACAGTGTCAAT 1878 	υ - <
AGATCGAAAAATTCAGCTATCGTAGAAGCTAAAGAAAAAGCTGAATTATCAGGAGAAAAT AGATCGAAAAATTCAGCTATCGTAGAAGCTAAAGAAAAAGCTGAATTATCAGGAGAAAAT AGATCGAAAAATTCAGCTATCGTAGAAGCTAAAGAAAAAGCTGAATTATCAGGAGAAAAT AGATCGAAAAATTCAGCTATCGTAGAAGCTAAAGAAAAAAGCTGAATTATCAGGAGAAAAT	, B &	1759 CTGCAAACAGGATCTGATTTGGGAACTTCCAAGTTTATGAATGA	σ ≺
ATTGGACTTGCGAGAACAGTACATCCGGAAGTGCAGTCGAGGAAGAATTAAATGTTCAA	o do Qy	1699 TATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAACATTACTAAAAATAGTGTT 1758 	0 <
AAAAAAGATTTAAATATAAAAGCTATCAATAAAGCAGAAACAGTGAATTTAGTTGGAAATAATAAAGAAAG	P &	1639 GGGGTTGTGGCTGCAAATATTTCTAACTATAATGCTTCCTCCCGTATAGATGTAGATGGA 1698 	0 4
TGGGTAGAACAGGAGAATTATAGCAAGGTATCGGTTGGAAAAGAGCTAAACTTGCTGCTGCTAGATTAGAGTAGAGAGGTATCGGTTGGAAAAGAGGTATCGTTGCTGCA	dd dd	1579 AGTGAAGCGATTAATTCCATTCGAGCTGCTGTAAAAGGTGGATTGGGGGATAGTGGTAAT 1638	0 <
599 TTTACCTCTTCCGGAGCTAATGGAGAAAGAGATGTTTCTTCTGTGGGAGGAGCTGTTTCG 681 TTTACCTCTTCCGGAGCTAATGGAGAAAGAGTTTTTTTTT	d dd	1519 TCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACGGATGATGTAAATGTGAGA 1578 	υ κ
9 GGACTGATTAAAGAAACTTTGAATTTTACAGGAGTAGGAAATTATCCAAATTTTCACACT 	, pp 40	1459 ATGAGAGATTCCAATAAAGTAGCTCTTTCAGTATTGGTGACGGAAGGAGAAAATAAAT	0 <
Y AIGAAAAATI KAGNGAAAAATI KI CGAAAGGATI TAAAGCITTITI CAGAAGGATIGAG 	8 8	1399 AGAGCAGATATTACTTCAAAATCTGAAAATACTATTGATGCTTCTGTTTCTGTTGGAACG 1458	0 <
	ס ס ס	1339 TATATTTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGAGAAGTAAAATCGAAAGGA 1398	U ~

밁

8 8 8 8 8 8

B & B & B & B

```
ARESULT 4
AAIG 75
ID AAIG 7
AAC AAIG
XX AAIG
XX AAIG
XX Leu
XX Leu
XX FT CDS
FT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
         Query Match
Best Local Similarity
Matches 2322; Conserv
                                                                                                                                        The invention provides an isolated Fusobacterium necrophorum leukotoxin polypeptide and its truncated versions. The leukotoxin protein can be expressed by standard recombinant methodology. The leukotoxin gene is useful for preparing a vaccine which confers effective immunity against infection caused by F. necrophorum. The vaccine is useful for immunising an animal against liver abscesses caused by F. necrophorum and for preventing foot rot caused by F. necrophorum infection. The present sequence represents a DNA encoding a F. necrophorum truncated leukotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAI67645;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA167645
                                                                                                                                                                                                                                                                                                                                                                       Fusobacterium necrophorum polypeptide useful as vaccine in immunizing an animal against an infection e.g. foot rot, or liver abscesses caused by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-APR-2000; 2000US-00558257.
24-APR-2001; 2001US-00841786.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fusobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bactericide;
                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                  Claim 10; Page 100-101; 108pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-APR-2001; 2001WO-US013240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200180886-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Leukotoxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (UNIV ) UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   necrophorum truncated leukotoxin protein (FINAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2581
                                                                                                                                                                                                                                                                                                                                                                                                                                   2002-049245/06.
)B; AAG66010.
                                                                                       2322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATCTTCCTTCGAACGTTTCTCATACTCCCGATAAAGGACCGTCTTTCAGTTTGGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        તું
T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTGGAGCATGGGGCGGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTGGAAGTGTTTCCTTTCAATAATATTAAAAAAGGAAACATCTGCCTGTCGTAGATGGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGATAAATTTGAAGGGAGCAAATAAAAAGGTAGAGGTGACTTCTTCTGATTCTACTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGATAAATTTGAAGGGAGCAAATAAAAAAGGTAGAGGTGACTTCTTCTGATTCTACTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTGGAAGTGTTTCTTTCAATAATATTAAAAAAGGAAACATCTGCTGTCGTAGATGGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          infection; immunisation; liv;
yaccine; truncated; FINAL;
               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KANSAS STATE RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first
                                                                                       BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Stewart
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        necrophorum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 location/Qualifiers
                                                                                        921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 2322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entry)
             23.9%; Score 2322;
100.0%; Pred. No. (
ive 0; Mismatch
                                                                                       Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ,
6
                                                                                        299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "truncated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Narayanan SK,
                                                                                       <u>ე</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FOUND
                                                                                                                                                                                                                                                                                                                    English
               Mismatches
                                                                                       532 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             leukotoxin (FINAL)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                liver abscess;
                                                                                          570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              dg.
                                   0
                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chengappa
                                                                                       ..
                                                   6
                                                                                       0
               0
                                                                                       ď;
                                                 Length 2322;
               Indels
                                                                                        0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   encoding DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  foot
               0
               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2760
               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                   ş
                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                 멹
                             밁
                                                                                                          밁
                                                                                                                                      5
                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                             8185
                                                                                                                                                                                                                                                                                                                                                                                                                                                      8125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7405
                                                                                                                                                  8365
                                                                                                                                                                                                                                                                                                    8245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7525
661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                   721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                       901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGGACAAGAATAATATCACTTCTACTGGTGGTTTTGGGAACTGCAGGTCTTGCTTCCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACA
                                                                                                                                                                                                                                                                                                                                                               GCAACACATAAAATGAAAGTAACAGGAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTAGGAGCAGTAGCAGGGGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAATCAATGTCAAAGTGGAAAAAGAAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAATTCAGAGGTTGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAGGAACAGTGGCAGTTACAAATATTAAAAAGAAATTCCGGAGTTACTGTTGAAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACA
                                   CAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCT
                                                         CAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCT
                                                                                                              GCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAG
                                                                                                                                GCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTTACGAAAG
                                                                                                                                                                                       GAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAAGTTGCCGGA
                                                                                                                                                                                                               GAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAGTATTGCCGGA
                                                                                                                                                                                                                                                                 GAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGAT
                                                                                                                                                                                                                                                                                              GAAGGAAATTTGTTCAGAACAAATCGAATTGAATGCAATTTCTAAAGTAGAAGGTTTGGAT
                                                                                                                                                                                                                                                                                                                                            GGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                     GCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGGAAGCTCTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAATTCAGAGGTTGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7704
   8544
                                                                           8484
                                                                                                                1020
                                                                                                                                                      8424
                                                                                                                                                                                                                             8364
                                                                                                                                                                                                                                                                                                                                                                                 8244
                                                                                                                                                                                                                                                                                                                                                                                                                                                          8184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7464
                                       1080
                                                                                                                                                                                                                                                                                                        8304
                                                                                                                                                                                                                                                                                                                                              840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                         960
                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7764
```

	9624	9565 AAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCTAAT	
	16	10	
	υ O	505 TCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAG	
	9504 2100	9445 AATRIAAGTAAGACAARTTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCT	
		981	
	9444	9385 GCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTAT	
	9384 1980	9325 GGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATAAATA	
	932 4 1920	9265 TTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCA	
	1860	1801 TTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAAATTCAAAAAAATAAT	
_	80	741	
	74	681	
	9144	280	
	9084 1680	9025 AATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACT	
	902 4 1620	8965 GATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGAAAT	
	8964 1560	8905 AAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTAGATGTATTGAATGAA	
	1500	8845 AAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGAT	
	8844 1440	381	
	8784 1380	8725 AGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATT	
	8724 1320	8665 AAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAACAGCAGCCGTTGAAAATTATACAAAG	
	8664 1260	201	
	8604 1200	8545 CAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGA	
	1140	81	

5

8 8 8 8 8 8 8

Ş

S

음 성 음 성 음

8 B

```
RRESULT 5
AA167A466
XX AA167
AC AA16
XX AA167
AC AA16
XX Leuk
XX I-euk
XX I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                               á
                                                                                      밁
                                                                                                                                       Ş
                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 2141; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention provides an isolated Fusobacterium necrophorum leukotoxin polypeptide and its truncated versions. The leukotoxin protein can be expressed by standard recombinant methodology. The leukotoxin gene is useful for preparing a vaccine which confers effective immunity against infection caused by F. necrophorum. The vaccine is useful for immunising an animal against liver abscesses caused by F. necrophorum The present preventing foot rot caused by F. necrophorum infection. The present sequence represents a DNA encoding a F. necrophorum truncated leukotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fusobacterium necrophorum polypeptide animal against an infection e.g. foot the bacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2141 BP; 763 A; 310 C; 513 G; 555 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 10; Page 97-98; 108pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25-APR-2000;
24-APR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fusobacterium necrophorum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Leukotoxin; infection; immunisation; liver abscess; foot rot; bactericide; vaccine; truncated; GAS; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F. necrophorum truncated leukotoxin protein (GAS) DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAI67643;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAI67643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein (GAS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2002-049245/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25-APR-2001; 2001WO-US013240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200180886-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (UNIV ) UNIV KANSAS STATE RES FOUND.
                                  3673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9625
                                                                                                                                             3613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2161 AAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCTAAT 2220
                                                                                         61
                                                                                                                                                                                                 GGAGCTTCTGGAAGTGTTTCTTTCAATAATATTAAAAAGGAAACATCTGCTGTCGTAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAAGCATACAAAAAA 9684
ACTITIGATGGAGCAIGGGGCGGATCIGCTGCACTICAGTGGAATCATATTGGAAGTGGA
                                                                                                                         GGAGTAAAGATAAATTTGAAGGGAGCAAATAAAAAGGTAGAGGTGACTTCTTCTGATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ដូ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAAGCATACAAAAAA 2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAATGA 2322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAATGA
                                                                                         GGAGTAAAGATTAAATTTGAAGGGAGCAAATAAAAAGGTAGAGGTGACTTCTTCTGATTCT
                                                                                                                                                                                                                                                                                                           22.0%; Scilarity 100.0%; F
Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000US-00558257.
2001US-00841786.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Stewart
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ос,
С
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Narayanan SK,
                                                                                                                                                                                                                                                                                                                                           Score 2141;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               not, or liver abscesses caused by
                                                                                                                                                                                                                                                                                                                                                                        멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chengappa
                                                                                                                                                                                                                                                                                                                                                                  6
                                                                                                                                                                                                                                                                                                              <u>.</u>.
                                                                                                                                                                                                                                                                                                                                                                  Length 2141;
                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9726
                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                              Gaps
                                     3732
                                                                                         120
                                                                                                                                             3672
                                                                                                                                                                                                                                                          3612
                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                              0
```

4633 GCAGAATTGAGTGGAAGCAATAAAGGAAGCAGAGAGGATAAAATTCATGCGAAACATGTA 4692	121 ACTITITITITIGANGCATIGAGGCGGANTCTGCTAGTAGGANTCATATTGGANGTGGAN 180 3733 ANTRACCACCACCACGGGCCGGGTTTAGCTGGANTCATATTATATT
RESULT 6 AAI67644 ID AAI67644 standard; DNA; 1887 BP. XX XX AC AAI67644; XX DT 27-FEB-2002 (first entry) XX DE P. necrophorum truncated leukotoxin protein (SH) encoding DNA. XX XX KW Leukotoxin; infection; immunisation; liver abscess; foot rot;	Oy 1211 CCANAGGTGATRANAGANGANTTICTICCCTERATTCCTTRANTGTGANCGCANATTATTCC 4872 1221 ATTUTTCGGGTTANTGTGGGGTGATTCCTTTGATTCCTTTGATTCAGGGGTTAGACGGANATTATTCC 4872 1221 ATTUTTCGGGTTANTGTGGGGTGATTCCTTTGATTACAGGACGAACGAAGGTTA 1440 1222 ATTUTTCGGGTTANTGTGGGGTGATTCATACAGACGTTGATTACAGGACGAAGGATA 1292 1221 ATTUTTCGGATTANTACTTTCATATANACCTCTGGTTTGATTACAGGACGAAGGATA 1240 1221 ATTUTTCAGATTCTTCGGATTANTACCTATATANACCTCTGGATTCAATTCA

밁

중 음 중

S

δ 밁

밁

음 성 음 성

밁 á 밁 Ś 음 성 음

ঠ

음 성 밁 **5 B 5**

8 8 8 8

B & B & B & B

```
S
                                                                                           밁
                                                                                                                  á
                                                                                                                                                                 ঠ
                                                                                                                                                                                                  밁
                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                           Ş
             Ş
                                       밁
                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 1887; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention provides an isolated Fusobacterium necrophorum leukotoxin polypeptide and its truncated versions. The leukotoxin protein can be expressed by standard recombinant methodology. The leukotoxin gene is useful for preparing a vaccine which confers effective immunity against infection caused by F. necrophorum. The vaccine is useful for immunising an animal against liver abscesses caused by F. necrophorum and for preventing foot rot caused by F. necrophorum infection. The present sequence represents a DNA encoding a F. necrophorum truncated leukotoxin
                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fusobacterium necrophorum polypeptide useful as vaccine in immunizing animal against an infection e.g. foot rot, or liver abscesses caused the bacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bactericide;
                                                                                                                                                                                                                                                                                                                                                                                                                                          protein (SH)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-APR-2000;
24-APR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-APR-2001; 2001WO-US013240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fusobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200180886-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (UNIV ) UNIV KANSAS STATE RES
                                                                                                                                                                                                                                                                                                                                  5624
               5984
                                                                5924
                                                                                                                   5864
                                                                                                                                                                        5804
                                                                                                                                                                                                                            5744
                                                                                                                                                                                                                                                                                 5684
                                       301
                                                                                           241
                                                                                                                                              181
                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2002-049245/06.
                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ដូ
                                                                                                                                                              CAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGA
                                                                                                                                                                                                                   AAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGTGACAGGTTCTGTAG
                                                                                                                                                                                                                                                                      CTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAA
            CTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTATA
                                                                                                                                                                                                                                                     CTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAA
                                       AGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAG
                                                                                                                                              CAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGA
                                                                                                                                                                                                  AAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTGTAG
Page
                                                                                                                                                                                                                                                                                                                                                          19.4%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-00558257
2001US-00841786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                 BP; 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Stewart
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       necrophorum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98-99; 108pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag= a
/product= "truncated
                                                                                                                                                                                                                                                                                                                                                                                                               .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ,
გ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 truncated;
                                                                                                                                                                                                                                                                                                                                                                                                                 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Narayanan
                                                                                                                                                                                                                                                                                                                                                           <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                               ü
                                                                                                                                                                                                                                                                                                                                                                      Score 1887;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FOUND
                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                              439 G; 468 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      leukotoxin (SH)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ds
                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chengappa
                                                                                                                                                                                                                                                                                                                                                                                    6,
                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                               0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                   Length 1887;
                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           , an
                                                                                                                   5923
                                                                                                                                                                        5863
                                                                                                                                                                                                                           5803
                                                                                                                                                                                                                                                     120
                                                                                                                                            240
                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                        60
               6043
                                                                                           300
                                                                                                                                                                                                                                                                                                                                                           ٥,
밁
                 S
                                                   밁
                                                                      Ş
                                                                                                    밁
                                                                                                                         Ş
                                                                                                                                                       밁
                                                                                                                                                                             Ş
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
1441
                                                                                                                                6944
                                                                                                                                                                                   6884
                                                                                                                                                                                                                                       6824
                                                                                                                                                                                                                                                                                                                    1081
                                                                                                                                                                                                                                                                                                                                                                         1021
                                                                                                                                                                                                                                                                                                                                                                                                  6644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6044
                        7064
                                                    1381
                                                                             7004
                                                                                                       1321
                                                                                                                                                          1261
                                                                                                                                                                                                                                                                 1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                     6584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6104
                                                                                                                                                                                                             1201
                                                                                                                                                                                                                                                                                                                                                                                                                            961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                       CAAAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTTGGAGTCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAG
             CTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATG
                                                                    GAGGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTT
                                                                                                                     CTTCTACTGATGTAAATGTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTG
                                                                                                                                                                                                                                   CAGGTACTGGAATCGGTTCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGG
                                                                                                                                                                                                                                                                                                                                    CTGGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGAGCAAGAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGCAGCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAAGGATTTGTTACCAATAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTATA
CTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATG
                                                    GAGGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTT
                                                                                                       CTTCTACTGATGTAAATGTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTG
                                                                                                                                                                         TTTCTGTCAATAATATTGCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACT
                                                                                                                                                                                                              CAGGTACTGGAATCGGTTCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGG
                                                                                                                                                                                                                                                                 AAAATTCTAAAATTATGACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAAT
                                                                                                                                                                                                                                                                                          AAAATTCTAAAATTATGACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAAT
                                                                                                                                                                                                                                                                                                                      CTGGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGA
                                                                                                                                                                                                                                                                                                                                                                         CAAAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                            GAAAGACGGAAGTAGATGTGGAAGAAGCAAAGATTTTGGTAAAAAAAGCTGAGATTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGCAGCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTATAAAAAGAAATACCAAGACAAGAGTTTGGAAAAACTACAATGTCTGATGAAGGTTTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTATAAAAAGAAATACCAAGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGTTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGTAGGTTCTGTTGGTTGGTGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAGTAGGTTCTGTTGGTGGTGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGAAGACTTATCACAAAAAAGAAAATAAGTAATAAAAAAAGGATTTGTTACCAATAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATATTA
                                                                                                                                                           TTTCTGTCAATAATATTGCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGCAGGAACTGTTAATATCAACAAGGTTTATGGAGAACAGAAGCTCTTGTAGAAAATT
                                                                                                                                                                                                                                                                 1200
                                                                                                                                                                                                                                                                                            6823
                                                                                                                                                                                                                                                                                                                                             6763
                                                                                                                                                                                                                                                                                                                                                                                                   6703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                    1440
                                                                                                        1380
                                                                                                                                                                                      6943
                                                                                                                                                                                                              1260
                                                                                                                                                                                                                                       6883
                                                                                                                                                                                                                                                                                                                                                                         1080
                                                                                                                                                                                                                                                                                                                                                                                                                             1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                      6643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
```

```
RESULT 7
AAA667AA
AAA667AA
AAA667AA
AAA66
AXX AAA66
AXX Leuk
KW bact
XXX Leuk
KW bact
XXX FT CDS
FT CDS
FT CDS
FT CDS
FT US
AXX CDS
PN W020
XXX 01-N
XXX 025-J
PR 24-J
PR 24-J
PR 24-J
PR 14-J
PR WPI
PR WPI
PR WPI
PR WPI
PR THE
PT THE

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAI67641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Leukotoxin;
bactericide;
                                                                          Fusobacterium necrophorum polypeptide animal against an infection e.g. foot the bacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                  WO200180886-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fusobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              F. necrophorum truncated leukotoxin protein (BSBSE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27-FEB-2002
   The
                                                                                                                                                    WPI; 2002-049245/06
P-PSDB; AAG66006.
                                                                                                                                                                                                                                                                                 25-APR-2000; 2000US-00558257 24-APR-2001; 2001US-00841786
                                                                                                                                                                                                                                                                                                                                        25-APR-2001; 2001WO-US013240
                                     Claim 10; Page 95;
                                                                                                                                                                                                                                              (UNIV ) UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7184
invention provides an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTCTGAAGGAAAAGGAACTTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTGGAACAGCTGTAGAAGATAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGTAGAAGATAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAACGGCAAAAGAGAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGGAGGAG
                                                                                                                                                                                                         ក្ត
ក
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGGACAAGAATAATATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATAAAAAAGTAAATGATGCTACGAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTCTACTGGTGGTTTGGGAACTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTCTACTGGTGGTTTGGGAACTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGGACAAGAATAATATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>ATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    infection; immunisation; liver vaccine; truncated; BSBSE; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first
                                                                                                                                                                                                                                              KANSAS STATE RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 necrophorum
                                                                                                                                                                                                           Stewart
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1. .1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA;
                                     108pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entry)
                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1130
                                     English
                                                                                                                                                                                                                                                                                                                                                                                                                                                       "truncated
   isolated Fusobacterium
                                                                                                                                                                                                           Narayanan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ВP
                                                                                                                                                                                                                                                FOUND.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7510
                                                                                                                                                                                                           sx,
                                                                                                                                                                                                                                                                                                                                                                                                                                                       leukotoxin
                                                                                             useful as vaccine in immunizing rot, or liver abscesses caused be
                                                                                                                                                                                                           Chengappa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         abscess;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       (BSBSE)"
   necrophorum leukotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              encoding DNA
                                                                                                                                                                                                           ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                         δ
                                                                                                                                    밁
                                                                                                                                                              8
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                        밁
```

541

ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT

660

600

600

540

480

661 661 601 601

721

841

AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT CAAAAAGCTATGGGAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA CAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCT TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTCAGCTCACATAGATTCTCCT ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT

840

780 780 720 720 660

900

481 481 421

GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG

ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC

```
និនិនិនិនិនិន្តិនិ
                                               polypeptide and its truncated versions. The leukotoxin protein can be expressed by standard recombinant methodology. The leukotoxin gene is useful for preparing a vaccine which confers effective immunity against infection caused by F. necrophorum. The vaccine is useful for immunising an animal against liver abscesses caused by F. necrophorum and for preventing foot rot caused by F. necrophorum infection. The present sequence represents a DNA encoding a F. necrophorum truncated leukotoxin protein (BSBSE)
```

Query Match Best Local Similarity Matches 1130; Conserv Sequence 1130 BP; 11.6%; Scilarity 100.0%; P 444 A; 135 C; 234 G; 317 T; 0 Score 1130; DB 6; 1 Pred. No. 9.1e-210; U; 0 Other; Length 1130;

421 361 361 301 301 241 241 181 181 121 121 61 61 \vdash GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTATGACATTACT ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT ATTGGAGGAAATTTATATTTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT AACTTTGTCAATGGAAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA AATAATATAGCAAATCTATATTTTGGGGAAAAAGAATAGTACGGGGGTAAATAATCTTTTT AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA **AACTTTGTCAATGGAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA** ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAA ACCGCGACTGAGAATTTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTATGACATTACT Mismatches Indels 0, Gaps 120 60 300 240 180 120 480 420 360 360 300 240 180 420

```
RESULT 8
AAT78868
ID TAT78868
ID TAT78868
ID TAT78868
ID TAT78868
ID TAT78868
ID TO 08-0
XX AAT7
XX AAT7
XX Plas
XX Pl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                               This sequence corresponds to the coding sequence for a plasmodium falciparum strain K1 pre-erythrocytic liver stage antigen-3 (LSA-3) protein. The gene sequence was isolated by screening a p. falciparum strain T9/96 library with serum from a missionary treated by prophylaxis (for strain T6/96 see FR9101286). Of 20 clones isolated, clone 7295 was used to screen a library generated from Thai strain K1. One clone contained a 6.85 kb insert including the genomic sequence AAT78867. The gene comprises a 1.8 kb region encoding 3 major blocks of 4 amino acid repeats and a 3' hydrophobic region corresponding to a glycosylphosphatidylinositol membrane anchoring sequence. The invention relates to new polypeptides of at least 10 amino acids derived from the LSA-3 peptides can be used to raise antibodies and as vaccines for immunotherapy of malaria
                                                                                                                                                                                                                                                                                                                             Claim 20;
                                                                                                                                                                                                                                                                                                                                                                                 Plasmodium falciparum poly:peptide(s) and related nucleic acids - from the liver stage antigen-3, useful for malaria vaccine prodn.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plasmodium falciparum; pre-erythrocyte; liver stage antigen; serum; prophylaxis; Thai strain; gene organisation; exon; intron; hydrophobic; glycosyl-phosphatidylinositol membrane anchoring sequence; antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         08-OCT-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAT78868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1997-065464/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Druilhe P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12-JUN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-DEC-1996.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9641877-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plasmodium falciparum;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P. falciparum liver stage antigen-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAT78868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INST PASTEUR
 5361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    immunotherapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGGAAAAAGAAACTTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCTAT 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT
                                                                                                                                                                                                                                                                                                                           Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGGAAAAAGAAACTTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Daubersies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (firet
BP;
                                                                                                                                                                                                                                                                                                                         2A-I; 69pp; French
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   96WO-FR000894
2388 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        malaria; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5361
431
ű
1169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              coding sequence
G.
1373
Η,
0
Ç
0
Other,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                960
                                           5
                                                                                 밁
                                                                                                                       S
                                                                                                                                                                    문
                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 1747; Conserv
                                                                                           1673
                                                                                                                                                                    1613
                                                                                                                                                                                                                                                  1553
                                                                                                                                                                                                                                                                                    5900
                                                                                                                                                                                                                                                                                                                         1493
                                                                                                                                                                                                                                                                                                                                                               5840
                                                                                                                                                                                                                                                                                                                                                                                                     1433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            833
                 ATGTTGAAGAAAGTGTAGCT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1.2%;
nilarity 41.7%;
Conservative
```

```
AAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAAGAAAAATAAGTAATA
                                                               GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                          CTAAAGAAGAAACAGATGATTATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATA
                                                                                                                                                                                         GTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAA 1672
                                                                                                                                                                                                                                                        CCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTG
                                                                                                                                                                                                                                                                                                                                                                                   TAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTTGAĀGĀĀĀTCGTĀGCTCĊAĀĆTGTTGAĀGĀĀĀTCGTĀĠĊTCCAĀCTGTTGAĀGĀĀĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGAAAAAATATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGTAGATGCAAAAGATCAAAAAACAATAAATACAA---TTGCCGGAAATGCAAATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGTTGAAGAAAGTATAGCTTCAAGTGTTGATGAAAGTATAGATTCAAGTATTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCA
                                                                                                                                                                                                                                                                                                                        TCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GC---AAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      atgttgatcaaactgatattgacaaagatttagaggaagaaataatggaaataaggaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ĠTGTTĠAAĠAAAĠTĠŤAĠAAĠAÁATĠŤŤĠAAGAAÁGTGTAGCŤĠAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAAACAATCAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 116.2; DB 2;
Pred. No. 2.5e-12;
0; Mismatches 2373;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
   6139
                                                                                                                              6079
                                                                                                                                                                                                                                                                                                                        1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     832
                                                                                                                                                                                                                                                        6019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14,
```

-GAAAATGTTGAAGAAATCGTAGCTCCAACTGTTG

\$ £	당 왕	B &	B &	B 성	B &	g Qy	p 8	Db Qy	Db 49	8 B	& B	Q.	B 8	g Q	B 성	g Q	g Q	B 8	B 8
ATAATTTTGGAACAGCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTT 7270	7151 AGCAAACAGCAGCAAATGCAGGAATCGGAAGGCAGCAGCAGCCAATGTCTTGGTAA 7210	7094 ATTTGACTTCCGTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGGAAAAAAATATTA 7150	7034 GAGTGGTTTATGTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTG 7093	6974 ATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGGAGCCGCAGGTCTTGCAGCAGTTACCG 7033	6914 AAACAGATATCGATCGTAGTAGACTCTTTACACTCTTACTGATGTAAAAGCTCTTTA 6973	6854 GAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATATGCAAATAAGGTAG 6913	6794 TAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTG 6853	6737 ATGAATCAAACACGAGAGCAAGAGTGAAAAATTCTAAAATTATGACTCGAAACAAGT 6793 Db	TAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTCCAACTG		2204 TAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTGTTGTAGAAAAGTGTGGCTCCAAGTG 2263 QY 6617 TTTTGGTAAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATG 6676	GAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAAGCAAAGA	QY 6497 AAGGAATTTCCTCTTTTGGAGTCGGAGCGGAGCAGCCGGGTAGGAGCCGGAGTGGCAG 6556	6437 AAACTACAATGTTCTGAAGGTTTTCGGAGAAGAAGCTGAAATTACAGCAGATTCTAAGC 6496	6380 TAGGAGCTTCTTCTGATACCAATATTATAAAAGAAATACCAAGACAAGA	6320 GAGATTACACGAATTCAATCGGAGTAGGTTCTGTTGGTGGTGGAAATGTAGGAG 6379	6260 AAACAGAAGCTCTTGTAGAAAATTCTATATTTAAATGCAAAACATTATTCTGTAAAATCAG 6319		6140 AAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATG 6199 Db
Qy 8268 TCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATC 8327	OY 8208 AGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGTAGAATTAAAAGATGTCGAAGAAGA 3935	. W			Db 3638 ATGAAAGTGTTGAGAAAGTTTTAGAATTGAAAAATATGGAAGGAGTAATGAAAATCCGG 8087 Oy 8028 AATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGG 8087				b 3398 TTAAGGATĞAACCGGTTCAAAAAĞAGGTAĞAAAAĞAAACTGTTAGTATTÄTTĞAAĞAAA 3457 y 7802 CAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAĞCAAAĞAATG 7861			y 7626TACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAG 7681		ι ω .	η ω	7 3	7 2	7	b 2864 ATTTAGAAGAAATGCAGTAGAAAGTAATGAAAATGTTGCAGAGAATTTAGAGAAATTAA 2923 y 7271 TAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAA 7330

```
밁
                                                         RESULT 9
# K K K
                                                                                                                                                  S
                                                                                                                                                                                         밁
                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                  닭
                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
               ABK50883
                                             ABK50883
                                                                                                                                                                                                                                                                                                                                                                                                                                                          4584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8628
                                                                                                                                                                                                                                                                                                                                                             9048
                                                                                                                                                                                                                                                                                                                                                                                           4644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4287
                                             standard;
                                                                                                                                                          TCAATTAATAACCAAAAATTCAAAAATAATATTACTTTAGCATCAA 9274
                                                                                                                                                                                                                   GAATGTACACATTTCCAATGAGATGGGATATTAAAAATTTTGGCAAAGCAGTATGCATCTTC
                                                                                                                                                                                                                                                            GGTTAAAGCGAAAAAAGAAAAATTAGAAAAAAAAGTTGAAGAAGGTGTTAGTGGTCTTAA
                                                                                                                                                                                                                                                                                                                                                                                           AGAAGAAGATATAGAAGAAGATAAAGTTGAAGATATAGATGAAGATATAGATGAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                      CTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACAATTTCAGGGGAAACAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTAAAAGATGTTTTATCTAGTGCATTAGGCATGGATGAAGAACAAATGAAAACAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGATATGGATAAGGAAAGTTTAGAAGATGTAACAACAAAACTTGGAGAAAAGTTGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAACATATAATAAGTGGTGATGCGCATATAAAAGGTTTTGGAAGAAGATGATTTAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACAAAAAATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -- AAGTAAAAGAATCAAAGAACTTGAAAGTGAAATTTTAGAAGATTATAAAGAATTAAA
                                                                                                                              AGTATCTAAAGCTTTAGAATCAAAAAATGATGTTACTAATGTTTTAA
                                                                                                                                                                                           AAAACACGTAGACGAAGTAATGAAATATGTTCAAAAAATTGATAAAGAAGTTGATAAAGA
                                                                                                                                                                                                                                                                                        TACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATC
                                                                                                                                                                                                                                                                                                                           AGGTGAAGACAAAGATGAAGTTATAGATTTAATAGTCCAAAAAGAGAAAACGCATTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAGAAAAAATAACAAAAAAGAAAGTAAGGTTTGATATTAAGGATAAGGAACCAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGTAGATGA-TTTAAAAGGAAGTATATTAGACATGTTAAAGGGGAGATATGGA--ATTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCATTAGAAGTTGAAGAAGAAAAAATTAGAAGAAGTACACGAATTAAAAGAAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTCGAAGAAGCTGAAGAAATAAAAGATCTTGAAGCAGATATATTAAAAGAAGTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGC
                                                                                                                                                                                                                                                                                                                                                         AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACTATTGAAACAGATATTTTÄGAAGAGAAAAAGAATÄGAAAAGATCATTTTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGATCGAAAAAGTATCTGATTTAAAAGATCTTGAAGAAGATATATTAAAAG------
                                             5529
                                                                                                                                                                                             4883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4106
                                                                                                                                                                                                                           9227
                                                                                                                                                                                                                                                                                          9167
                                                                                                                                                                                                                                                                                                                                                           9107
                                                                                                                                                                                                                                                                                                                                                                                                                                                         4643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8807
```

유성

GTTCTQATGAAGCAACCTTTACTTAATGAATTCTGAGTTAAGCAGTAACTTCTTTCA 5185

```
Query Match
Best Local S
Matches 1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-AUG-2003
30-JUL-2002
                                                                                           The invention describes a vaccine comprising a Th1-inducing adjuvant (I) and a protective liver-stage antigen (LSA), or its immunogenic fragment, from a human malaria parasite, where LSA is a fragment of LSA-3, then (I) is not montanide. The vaccine is useful for treating or preventing malaria, specifically where caused by Plasmodium falciparum. The vaccine is formulated in SBAS2 adjuvant, an oil-in-water emulsion containing QS21 and 3D-MPL (de-O-acylated monophosphoryl-lipid A, the combination of which results in strong induction of a circumsporozoite protein-specific cytotoxic T cell response, which is not generally induced by vaccines based on recombinant proteins, and synergistically increases production of gamma-interferon. This sequence encodes the liver-stage antigen-3 (LAS) from the Plasmodium falciporum strain K1 used to develop the recombinant proteins for the vaccine. (Updated on 07-AUG-2003 to correct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        exon
                                                       Sequence
                                                                                   OS field.)
                                                                                                                                                                                                                                                                                        Disclosure; Page 16; 56pp; English.
                                                                                                                                                                                                                                                                                                                Vaccine for treatment or prevention of malaria, comprises liver antigen and adjuvant that induces Thl response.
                                                                                                                                                                                                                                                                                                                                                          P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                             (SMIK)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-MAY-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EP1201250-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         malaria parasite; malar:
gamma-interferon; gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Liver stage antigen-3; LSA-3; vaccine; Th1-inducing adjuvant; malaria parasite; malaria; protein-specific cytotoxic T cell
                                                                                                                                                                                                                                                                                                                                                                       WPI; 2002-373883/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25-OCT-2000; 2000EP-00203724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 intron
 cal Similarity
1747; Conserv
                                                                                                                                                                                                                                                                                                                                                          AAU96699
                                                                                                                                                                                                                                                                                                                                                                                                                              INST PASTEUR
                                                                                                                                                                                                                                                                                                                                                                                                                                           SMITHKLINE BEECHAM BIOLOGICALS
                                                        5529
                                                                                                                                                                                                                                                                                                                                                                                                   Druilhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000EP-00203724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plasmodium falciporum liver stage antigen-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (revised)
(first entry)
                                                        BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          367. .5529
/*tag= d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /number= 1
199. .366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product= "LSA-3"
/note= "Liver stage antigen-3"
/transl_except= (pos:5524. .5526,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      number= 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 *tag= c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       *tag= b
                                                                                                                                                                                                                                                                                                                                                                                                  סי
                                                       2473 A; 435 C; 1174 G; 1447 T; 0 U; 0 Other;
              1.2%;
41.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
 Score 116.2;
Pred. No. 2.5e
0; Mismatches
                2.5e-12
                            DB 6;
                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     aa:Lys-Glx)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (LSA-3)
  67,
  Gaps
                                                                                                                                                                                                                                                                                                                               stage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #1
  14;
```

7331 AATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGAGA 7390	6260 AAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCTGTAAAAATCAG 6319
ACGAAACTGTATTTAATACTGTATTAGATAAAGTAGAGGAAAACAGTAGAAAATTAGCGGAG	6200 CCGCTGGTTCAGGACAGCCGGAGTGCAGGACTGTTAATATCAAGGTTTATGGAG 6259
таларарстттадассваастталслардалсардатараладсталатсятсстасслара	2011
7211 ATAATTTTGGAACAGCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTT 7270	AAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAAATCTTTATTGGCAAATG
	OY 6080 AAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATA 6139
AAAAGAAAGAAGTAATAGAAGTAAAAAAAAAAAAAGAAGA	6020 CTAAAGAAGAAGATGATTATATTACTCAAGGGCAAGTAGATAAAGTGGTAGATA 6079
	5960 CCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTG 6019 Db
2792 GTAACATATTAGAGGAGATACAAGAAAATACTATTACTAATGATACTATAGAGGAAAAAT 2851 7034 GAGTGGTTTCTGTTAACACTATAAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTG 7093	5900 TAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAA 5959
2732 TÁGTCACCÁCAATAĆTAGAAÁACGTÁGÁAGAAAĆTÁĆAGCTGAÁAGTGTÁÁCTAĆTTTTÁ 2791 6974 ATAAATTTTCGAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTTGCAGCAGTTACCG 7033	1661 ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA 1720 Qy
2672 TCGAAACTGAGGAAATAAAGGACAGTATATTAAATGAGATAGAAGGAAG	
GAATTCTTGCAGCCGGAGTATCTGGAGTAGGTAG	1541 ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAAGCTGAAAAATGTTGAAGAAA 1600 Qy 5780 GAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATAAGAAT 5839
6794 TAGATGTAATAGCAGAAAATGAGATAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTG 6853	GCAAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAG
	5663 AAAATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAA 5722
	5603 TTTCCGGAGCAAGTGGAACTAGCAGTAGGAGCTGGAGTAGCAGTTAATAAATTACAC 5662
2432 TTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTG 2491 6677 CCGCAGTCGGAGTGGCTGCAAAAGGGAGCTGGAAGTTGGAGCAGCAGTGGCAGTTACCAAAG 6736	5543 AGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAACTGGTCACAAATGCGACAGTGC 5602
2372 TAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTG 2431 6617 TTTTGGTAAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATG 6676	
GAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAAGCAAAGA	1241 TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA 1300 OY 5483 ATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAAATAATGGAAATAAGGAAA 5542
6497 AAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCCGGGGTAGGAGCCGGGTAGGACCGGAGTAGGACCGGAGTAGGACCGGAGTAGGAGAAATCGTAGGAGAAAATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCG 2371	
TAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATG	5363 ATGTGACTGCAAAAGATTATACTATGGACCAATACTATAGCAGTCGGAGGTGGAGGAGCAA 5422
	5303 TAGCTATTGTAAAAAAAATTACAACGCGAATGATCAAGATAGAAAAAATATCA 5362
2132 TAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTG 2191 6380 TAGGAGCTTCTTCTGATACCAATATTATAAAAAGAAATACCAAGACAAGA	5243 GAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTTGGAAAACCAGTTA 5302
2072 TTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCG 2131 6320 GAGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGTGGGAAATGTAGGAG 6379	

8 8 8 8

Ś

ঠ

음 성

8 8 8 8

```
8028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3626
4215
                                                                                                                                                                                                                                                                                                                                                               4044
                                                                                                                                                                                                                                                                                        TCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGAAGTATTTTCATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGTTGAAATAAATGACATTACTAGCAAACTTATTGAAGAACTCAAGAGTTAAATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAAGAAAAACAGAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAATGAATTCAGAGGTTGAAATTGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTTTTTTAATTTGGAAGATGTATTTÄÄAAGTGAÄAGTGÄTGTAATTÄCTGTÄGÄAGAAÄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGTGTTCAAGAAACTGTAACTGAACATGTAGAACAAAATGTATATGTGGATGTTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCCGGAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGATATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAG
                                                        ACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTA
                                                                                                                   -- AAGTAAAAGAATCAAAGAACTTGAAAGTGAAATTTTAGAAGATTATAAAGAATTAAA
                                                                                                                                                                                                                                      CAAGATCGAAAAAGTATCTGATTTAAAAGATCTTGAAGAAGATATATTAAAAAG-----
                                                                                                                                                                                                                                                                                                                                                               GGAACATGATATAACGACGACGTTGGATGAAGTTGTAGAATTAAAAGATGTCGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                     AGAAGATTCTAAAGAATAATAGATGCAAAAGATGATACATTAGAAAAAGTTATTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTAAGGATGAACCGGTTCAAAAAGAGGTAGAAAAAGAAACTGTTAGTATTATTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCTATTAGGAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----TACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATAT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGTAATCCAATCAGAAGAAAAGGTTGATTTGAATGAAAATGTGGTTAGTTCGATTTTAG
AACTATTGAAACAGATATTTTAGAAGAGAAAAAGAATAGAAAAAGATCATTTTGAAAA
                                                                                                                                                                              TTCTGTAGTATCAGGAAATGGAGGAGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTAAAGATAAAGAAAAGATGTTTCACTAGTTGTTGAAGAAGTTCAAGACAATGATATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGATGCAGTÁGAAGAATCCÁTAGÁAATATCTTCAGATTCTAÁAGAÁGAAACTGAATCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGGAATACAAGAAAATTTATTAACAGGTATG-----TTTCGAAGTATAGAAACCAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAGTTTAGAAAACAATGAAATGGATAAAGCATTTTTTAGTGAAATATTTGATAATGTAA
                                                           8447
                                                                                                                   4214
                                                                                                                                                                                                                                                                                                                                                                                                                       8267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3265
4274
                                                                                                                                                                                                                                                                                                                                                            4103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3325
```

멍

5

ક

문 8 밁 ঠ

밁 S 음 성

밁 á δ

밁

밁

```
Ś
                                                                 밁
                                                                                            Ş
                                                                                                                              문
                                                                                                                                                                 ঠ
                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
5052
                                                                    4992
                                                                                                                                         4932
                                                                                                                                                                                                            4872
                                                                                                                                                                                                                                             9048
                                                                                                                                                                                                                                                                                 4812
                                                                                                                                                                                                                                                                                                                  8988
                                                                                                                                                                                                                                                                                                                                                    4752
                                                                                                                                                                                                                                                                                                                                                                                       8928
                                                                                                                                                                                                                                                                                                                                                                                                                       4692
                                                                                                                                                                                                                                                                                                                                                                                                                                                          8968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8448 CACAAAAAATATTTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGT 8687
                                  TCAATTAATAACCAAAAATTCAAAAAATAATATTACTTTAGCATCAA
                                                                                                     GAATGTACACATTTCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTC
                                                                                                                                         GGTTAAAGCGAAAAAGAAAAATTAGAAAAAAGTTGAAGAAGGTGTTAGTGGTCTTAA
                                                                                                                                                                        TACAAGAGCAAAAGTAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATC
                                                                                                                                                                                                                                                                               AGAAGAAGATATAGAAGATAAAGTTGAAGATATAGATGAAGATATAGATGAAGATAT
                                                                                                                                                                                                                                                                                                                CTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATATGTGATTAAGAAAAATGTAGA
                                                                                                                                                                                                                                                                                                                                                    TGAAATÁGTAGAÁGTTGAAATGÁÁAGÁTGAAGÁTATÁGÁAGAÁGATGTÁGÁÁGAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                   AAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                       AAAGAAAAAATAACAAAAAAGAAAGTAAGGTTTGATATTAAGGATAAGGAACCAAAAAGA 4751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAG 8807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGATATGGATAAGGAAAGTTTAGAAGATGTAACAACAAAACTTGGAGAAAGAGTTGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAACATATAATAAGTGGTGATGCGCATATAAAAGGTTTGGAAGAAGATGATTTAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCATTAGAAGTTGAAGAAGAAAAAAATTAGAAGAAGTACACGAATTAAAAGAAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAATAŢĀĢĀĀTCŢTTĀĢCGĢTĀGCCGGTGTGCĀTĢCĀCĀĀGGĀAĀCĀĀĀĢCĀTTTĀC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTCGAAGAAGAAGCTGAAGAAATAAAAGATCTTGAAGCAGATATATTAAAAAGAAGTATC
AGTATCTAAAGCTTTAGAATCAAAAATGATGTTACTAATGTTTTAA
                                                                    AAAACACGTAGACGAAGTAATGAAATATGTTCAAAAAATTGATAAAGAAGTTGATAAAGA
                                                                                                                                                                                                            AGGTGAAGACAAAGATGAAGTTATAGATTTAATAGTCCAAAAAGAGAAAACGCATTGAAAA
                                                                                                                                                                                                                                             <u>AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTAAAAGATGTTTTATCTAGTGCATTAGGCATGGATGAAGAACAAATGAAAACAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGC 8747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTAGATGA-TTTAAAAGGAAGTATATTAGACATGTTAAAGGGAGATATGGA--ATTAGG
                                  9274
                                                                                                                                                                                                              4931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4454
                                                                                                                                                                                                                                                                                 4871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4571
```

```
AAT78867
ID AAT788
XX AAT78
AC AAT78
XX OB-OC
DT 08-OC
XX P. fa
XX Plasm
KW Plasm
KW proph
KW glyco
KW vacci
XX
                                                    P. falciparum liver stage antigen-3 genomic sequence
                                                                        08-OCT-1997
                                                                                                            AAT78867
                                                                                                            standard;
                                                                        (first
                                                                                                            DNA;
                                                                       entry
                                                                                                            6152
                                                                                                            ВP
```

ş

밁 Ş 당 S 유 망 ঠ 유

음 성 밁 ş 문 중 음

ş 밁

plasmodium falciparum; pre-erythrocyte; liver stage antigen; serum; prophylaxis; Thai strain; gene organisation; exon; intron; hydrophobic; glycosyl-phosphaticylinositol membrane anchoring sequence; antibody; vaccine; immunotherapy; malaria; ds.

```
₽
                                                                                                                                                      ş
                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                         밁
                         S
                                                            밁
                                                                                    S
                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 1747; Conserv
                                                                                                                                                                                                                                                                                                                                                                   This sequence corresponds to the genomic sequence encoding a Plasmodium falciparum strain K1 pre-erythrocytic liver stage antigen-3 (LSA-3) protein (AAM24790). The gene sequence was isolated by screening a P. falciparum strain T9/96 library with the serum from a missionary treated by prophylaxis (for strain T6/96 see FR9101286). Of 20 clones isolated, clone 729S was used to screen a library generated from Thai strain K1. One clone contained a 6.85 kb insert including the sequence presented here. The gene organisation comprises a first exon, a short 168 bg intron and a 5 kb second exon containing a 1.8 kb region encoding 7 blocks of 4 amino acid repeats and a 3' hydrophobic region encoding to a amino acid repeats and a 3' hydrophobic region corresponding to a glycosyl-phosphatidylinositol membrane anthoring sequence. The invention relates to new polypeptides of a least 10 amino acids derived from the LSA-3 polypeptide with the exception of peptides AAW24791-4. The LSA-3 peptides can be used to raise antibodies and as vaccines for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plasmodium falciparum poly:peptide(s) and related nucleic acids - from the liver stage antigen-3, useful for malaria vaccine prodn.
                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (INSP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12-JUN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27-DEC-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plasmodium falciparum
                                                                                                                                                           5186
1197
                                                                                                                            1077
                                                                                                                                                                                            1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INST PASTEUR
                                                                                                                                                                                                                                                                                                                         6152
GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA 1256
                                                                                                                                                                                            GTGTTGAAGAAAGTATAGCTTCAAGTGTTGATGAAAGTATAGATTCAAGTATTGAAGAAA
                                                                                                                                                                                                                       GTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCA
                              TAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGAAAAAATATCA
                                                                GTGTTGAAGAAAGTGTAGAAGAAATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAA
                                                                                         GAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAAACAATCAGTTA
                                                                                                                            ATGTAGCTCCAACTGTTGAAGAATCGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAA
                                                                                                                                                           ATGTAGATGCAAAAGATCAAAAAACAATAAATACAA---TTGCCGGAAATGCAAATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Daubersies
                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                        BP; 2725 A; 463 C; 1215 G;
                                                                                                                                                                                                                                                                                                                                                         of malaria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1A-E; 69pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   95FR-00007007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96WO-FR000894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /number= 1
443. .5602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             275. .442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17. .274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              product= "liver stage antigen-3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  *tag= c
                                                                                                                                                                                                                                                                        1.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 5605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ט
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      French
                                                                                                                                                                                                                                                           ..
                                                                                                                                                                                                                                                         Score 116.2; DB 2;
Pred. No. 2.6e-12;
0; Mismatches 2373;
                                                                                                                                                                                                                                                                                                                         1749
                                                                                                                                                                                                                                                                                                                         H
;
                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                         U; 0 Other
                                                                                                                                                                                                                                                                                           6152;
                                                                                                                                                                                                                                                           67;
                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     derived
and
                                                                1196
                                                                                                                            1136
                                                                                                                                                                                            1076
                                                                                                                                                                                                                            5185
                                                                                                                                                                                                                                                           14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ୃଷ୍ଟ
                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                      S
                                                                                                     S
                                                                                                                                           밁
                                                                                                                                                                        δ
                                                                                                                                                                                                            멼
                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                          밁
                  밁
                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                          1917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5363
                                                                                                                                                                                                                                                                                                                                            1977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                  GAGATTACACGAATTCAATCGGAGTAGGTAGGTCTGTTGGTGTTTGGTGGAAATGTAGGAG
                                                                                                                                                                      AAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCTGTAAAAATCAG
                                                                                                                                                                                                            TGGCTCCAAGTGTTGAAGAAGTGTAGAAGAAAATGTTGAAGAAAGTGTAGCTGAAAATG
                                                                                                                                                                                                                                            CCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAG
                                                                                                                                                                                                                                                                                                            ANAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATG
                                                                                                                                                                                                                                                                                                                                                                          AAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAAGAAAAATAAGTAATA
                                                                                                                                                                                                                                                                                                                                                                                                            GTGTÄGCTGÄÄÄÄATGTTGÄÄGÄÄÄGTGTAGCTGÄÄÄAATGTTGAÄGÄÄÄÄGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                          CTAAAGAAGAAACAGATGATTATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GC---AAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA 1496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGCANATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAA
                  TTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAATGTTGAAGAAAGTG
                                                                                                                                             TTGAĀĠĀĀAGTGTĀĠCTĠĀĀĀĀTGTŤGĀĀGĀĀĀGTĠTĀGCTGĀĀĀĀŤGTŤĠĀĀGĀĀĀTCĠ
                                                                                                                                                                                                                                                                             AAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTGTTGTA---GAAAGTG
                                                                                                                                                                                                                                                                                                                                            ATGITGAAGAAAGTGTAGCT-----GAAAATGTTGAAGAAATCGTAGCTCCAACTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5422
                                                  6436
                                                                                  2267
                                                                                                                                                                                                                                                                                                                                                                               6139
                                                                                                                                                                                                                                                                                                                                                                                                               1976
                                                                                                                                                                                                                                                                                                                                                                                                                                              6079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5602
                                                                                                                  6379
                                                                                                                                                  2207
                                                                                                                                                                                 6319
                                                                                                                                                                                                                 2147
                                                                                                                                                                                                                                               6259
                                                                                                                                                                                                                                                                                 2087
                                                                                                                                                                                                                                                                                                               6199
                                                                                                                                                                                                                                                                                                                                               2030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5542
```

4411 TTCATTAGAAGTTGAAGAAGAAAAAATTAGAAGAAGTACACGAATTAAAAGAAGAGGT 4470 8568 GAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGC 8627	TAGTAATCCAATCAGAAGAAAAGGTTGATTTGAATGAAAATGTGGTTAGTTCGATTTTAG	6 음 2
8508 GAATTATAGAATCTTTAGCGGTAGCCGGTGCACAAGGAACAAAGAACAAAGCATTTAC	7391 ATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAATG 7450	숙 음 숙
	7390	B 8
8328 TTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGC 8387		Å Å
8268 TCGATTGAATGCAATTTCTAAAGTAGAAGGTTTTGAATGAA	7211 ATAATTTTGGAACAGCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTT 7270 Db	8 8
8208 AGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAGGAAGAATTTGTTCAGAACAAA 8267 	7151 AGCAAACAGCAGCAAATGCAGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAA 7210	ß 8
8148 AGCAGTTTTTAAAGCAGTAACAGGTTCTGTATTGGGAGGAGATTGGAGTCACCAAGGCAGA 8207	3047	용 성
8088 AAGAAGTATTTTICATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAGTAAGT	7034 GAGTGGTTTATCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTG 7093	ß &
	6974 ATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGGCCGCAGGTCTTGCAGCAGTTACCG 7033	B &
	6914 AAACAGATATCGATCATAGTACTTTTACACTCTTCTACTGATGTAAAATGTAAAAGCTCTTA 6973	용 성
3822 TTAAAGATAAAGAAAAGATGTTTCACTAGTTGTTGAAGAAGTTCAAGACAATGATATGG	6854 GAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATGCAAATAAGGTAG 6913	B 8
785 Z ARAIGMATICHGAGSITGHAANITGHGHANGHATITICAAIGHGHANAIAGNGTAACIA 7911	6794 TAGATGTAATAGCAGAAAATGAGAATAAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTG 6853	음 성
3702 TGGAAGAAATATTGTAGATGTATTAGAGGAAGAAAAAGAAG	6737 ATGAATCAAACACGAGAGCAAGAGTGAAAAATTCTAAAATTATGACTCGAAACAAGT 6793	
3642 TTAAGGATGAACCGGTTCAAAAAGAGGTAGAAAAAGAACTGTTAGTATTATTGAAGAAA	6677 CCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTGGCAGTTACCAAAG 6736	8
3582 TGTTTTTAATTTGGAAGATGTATTTAAAAGTGAAAGTGATATTAACTGTAGAAGAAA	6617 TTTTGGTAAAAAAGCTGAGAATACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATG 6676	& 성
7626IACAGARATGUTTEAKCAGCATATCAAGGUCCIGIAGAGAGCATIGGAAATAGAATAGAATAGAATAGAA	6557 GAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAAGAAGA 6616	유 성
462	6497 AAGGAATTTCCTCTTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTAGGAGCCGGAGTGGCAG 6556	음 성
3402 ATAATATAGAAAATATGAAAGGATTTATTAAATAAATTAGAAAATATTTCAAGTACTG	6437 AAACTACAATGTCTGAAGGTTTCGGAGAAAAGCTGAAATTACAGCAGATTCTAAGC 6496	B &

```
₽
B
RESULT 11
AATO5868
ID AATO5
XX AATO5
XX AATO5
XX 27-AL
DT 27-AL
DT 14-AL
XX Chich
XX Chich
XX immur
XX immur
XX immur
XX immur
XX Leuco
XX FH Key
FH Key
FT CDS
FT CDS
FT TFT
XX JP07:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                음 성
                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                        27-AUG-2003
14-AUG-1996
                                                                                                                                                                                                                                                                                                                               AAT05868 standard;
                                                                                                                                                                                               Chicken leucocytozoan; immunogen;
                                                                                                                                                                                                                             Chicken leucocytozoan DNA encoding
  JP07284392-A
                                                                                                                                                       Leucocytozoon
                                                                                 misc_feature
                                                                                                                                                                                    immunisation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4828
                                                                                                                                                                                                                                                                                                                                                                                                       5128 AGTATCTAAAGCTTTAGAATCAAAAAATGATGTTACTAATGTTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGATATGGATAAGGAAAGTTTAGAAGATGTAACAACAAAACTTGGAGAAAAGAGTTGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTAGATGA-TTTAAAAGGAAGTATATTAGACATGTTAAAGGGAGATATGGA--ATTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAGCTTTGGCTAAAAATGAAAAATTATGGAAAATGTAAAAGGAACTGGAGGAGCCTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAACATATAATAAGTGGTGATGCGCATATAAAAGGTTTGGAAGAAGATGATTTAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAATGTACACATTTCCAATGAGATGGATATTAAAAATTTTGGCAAAGCAGTATGCATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTTAAAGCGAAAAAGAAAAATTAGAAAAAAAGTTGAAGAAGGTGTTAGTGGTCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              тасаададсаааадтааататтсттедаааадсадасстссадстдесастдесатате
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAAACAAGAATATCAAGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAAGAAGATATAGAAGAAGATAAAGTTGAAGATATAGATGAAGATATAGATGAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTAAAAGATGTTTTATCTAGTGCATTAGGCATGGATGAAGAACAAATGAAAACAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAATTAATAACCAAAAATTCAAAAAATAATATTACTTTAGCATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>AAAGAAAAAATAACAAAAAAGAAAGTAAGGTTTGATATTAAGGATAAGGAACCAAAAGA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAACACGTAGACGAAGTAATGAAATATGTTCAAAAAATTGATAAAGAAGTTGATAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGTGAAGACAAAGATGAAGTTATAGATTTAATAGTCCAAAAAGAGAAAACGCATTGAAAA
                                                                                                                                                                                                                                                        (revised)
(first entry)
                                                                                                                                                                                    vaccination;
                      /*tag= b
/note= "fragment referred to in
insert in a recombinant vaccine
leucocytozoan disease"
                                                                                    /*tag=
1150.
                                                                                                               Location/Qualifiers
1. .3399
                                                                                                                                                                                                                                                                                                                               DNA;
                                                                                 ]= a
.3218
                                                                                                                                                                                                                                                                                                                               3399
                                                                                                                                                                                     88
                                                                                                                                                                                                                                                                                                                               ₽₽
                                                                                                                                                                                                  recombinant vaccine;
                                                                                                                                                                                                                             immunogenic protein
                                           the claims, against chi
                                                                                                                                                                                                  protection;
                                                                                                                                                                                                                                for
                                            chicken
                                                                                                                                                                                                                                                                                                                                                                                                       5174
                                                                                                                                                                                                                                                                                                                                                                                                                                     9274
                                                                                                                                                                                                                                vaccines
                                                          for
                                                           use
                                                           as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                        Ş
                                                                                                                                                                        밁
                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                       밁
     밁
                          δ
                                                           밁
                                                                                Ş
                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 748;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAT05868 encodes a chicken leucocytozoan immunogenic protein, this DNA or a fragment of it can be used in a recombinant vaccine to immunise against chicken leucocytozoan disease. The DNA is used in a vector and operatively linked to an expression regulatory sequence as in standard practice. (Updated on 27-AUG-2003 to correct OS field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 6; Page 6-9; 35pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chicken leucocytozoan immunogenic protein against chicken leucocytozoan disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31-OCT-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (DOBU-) DOBUTSUYO SEIBUTSUGAKUTEKI (KITA) KITASATO KENKYUSHO SH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1461
                                                                                                                                                                                                                                                                                                                                                 1701
                                                                                                                                                                                                                                                                                                                                                                                                           1641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1996-006311/01.
DB; AAR97866.
                                                                                                                                                                                                                                                            7470
                                                                                                                                                                                                                                                                                                                                                                                                                                        7290
                                                                                                                     1941
       2061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3399 BP; 1577 A; 508 C; 798 G; 516 T; 0 U;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           адалаладталатсталседсалалдасдалалалалтатталдссаласадсадсалатсс
                                                                                                                                                                                                                                                                                                                                                                                                        ACAAGAAGAGCATGAAAAAGTAACACATGAAGAAGAAGAAAAAAAGAAGAAGTAACACATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                  TAACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAAAACGAAACAACACATTATGAAAGAGAAATAATTTATATAGTAGATGATTTACCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGT
                                                                                                                                                                                                                                                                                                               TAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGGA
                                                                                                                                                                                                                                                                                                                                                TATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTAAATGTAGAAGAATCAGATGAAACAGAACATATAACATATGAAATAGATAATGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACATGAAGAAGAAAAAGAAGAAGTAACACATGAAG--AAATAGAAAAAAGAAGAGCATGAA
                               AATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGATGTT
                                                                                      GCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCT
                                                                                                                    AAAAGAAGAAGTAACACATGAAGAAATAGAAAAAGAAGAGCATGAAGAAGTAATACATGA
                                                                                                                                              GTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAACA
                                                                                                                                                                           AGAAGTAACACATGAAGAAATAGAAAAAAGAAGAGCATGAAGAAGTAATACATGAAGAAGA
                                                                                                                                                                                                    AACAGTGGCAGTT--ACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTT
                                                                                                                                                                                                                                   · AACACATGAAGAAAAAGAAAAAGAAGAAGAAGAAGAAGTAATACATGAAGAAGAAAAAAGA
                                                                                                                                                                                                                                                           CAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGG
                                                                                                                                                                                                                                                                                       TGAAGAAATAGAAAAAAGAAGAGCATGAAGAAGTAATACATGAAGAAGAAGAAGAAGAAGAAGT
                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94JP-00080643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94JP-00080643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 104.2; DB 2
Pred. No. 4.8e-10;
0; Mismatches 963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEIZAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               •
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KYOKAI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            963;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 3399;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               recombinant vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
```

1520 7169

ū

1640 7289 1580 7229

1940

2118 7767 2060 7707 2000 7647 1880

7529

7587

밁

중 유

र्

밁

ş

```
2539
                                                             GAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGG 8822
                                                                                                                                                                                                                                                                                                              GGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                               GTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAATTCAGAGGTTGAAATTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTGTAAAAGATAAATCGGAATTGAGAGCCGAAGCAAAAGGATTAACCGTAGGAGCGGTA
TATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAGAAGAAAAAGTAATGAAGAAG
                                                                                                                                                                                           TATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTA
                                                                                                                                                                                                                                                                                                                                                                                         GAAGAAGAAGAAATGTAACATATGAAGAAGAAGAAGAAAAAGTAACACATGAAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTAACACATGAAGAAGAAGAAGAAAAGTAACACATGAAGAAGAAGAAAAGTAACACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATGAAGAAGAAGAAAAGTAACACATGAAGAAGAAGAAAAAAGTAACATATGAAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAAAAGAAGAAGTAACACATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAAAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGAAGAAAAGAAGAAGTAACACATGAAGAAGAAAAAAAGAAGAAGTAACACATGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAGCAGTAGCAGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAAAAGTAACACATGAAGAAGAAGAAAAAGTAATACATGAAGAAGAAGAAAAAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAGAAGAAGAAGAAAAGTAACACATGAAGAAGAAGAAAAAGTAACACATGAAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ---TTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGTAACACATGAAGAAGAAAAAGAAGAAGTAACACATGAAGAAGAAGAAAAGTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATACATGAAGAAGAAAGAAGAAGTAACACATGAAGAAGAAAAAGAAGAAGTAACACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCTGTA 8007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATGAAGAAGTAATACATGAAGAAGAAGAAGAAGAAGTAACACATGAAGAAGAAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -TTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCA-GATAATGTGAATATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAGTAACACATGAAGAAGAAGAAGAAAAAGTAATACATGAAGAAGAAAAAAAGAAGAAGTA
                                                                                                                                                                                              8775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2238
```

ঠ

밁

8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

```
ADZ72262
ADZ7262
ADZ7262
ADZ7262
AC ADZ72
AC ADZ
                                           Ş
                                                                                                   닭
                                                                                                                                                    ş
밁
                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 610; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present invention relates to the protection against malaria. More particularly, the invention pertains to a family of MSP-3 (merozoite surface protein 3)-like genes (MSP-3-1, MSP-3-2, MSP-3-4, MSP-3-5, MSP-3-6, MSP-3-7 and MSP-3-8) located on chromosome 10 of Plasmodium falciparum, highly conserved in P. falciparum strains, simultaneously expressed in P. falciparum at the erythrocytic stages and encoding proteins which have a Asn-Leu-Arg-Asn or Asn-Leu-Arg-Lys signature at their N-terminal extremity and which are located at the merozoite surface. The characterization of this gene family enables the definition of immunogenic and vaccine compositions against P. falciparum. The present sequence is the P. falciparum MSP-3-6 gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel MSP-3-like family genes located on falciparum, which encode proteins useful compositions against malaria.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1701 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 6; SEQ ID NO 11; 137pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24-OCT-2003;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EP1526178-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nucleic acid vaccine; plasmodium falciparum infection; antimalarial; infection; merozoite surface protein 3-like gene; MSP-3-6; chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADZ72262;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADZ72262 standard; DNA; 1701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2005-323987/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24-OCT-2003;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-JUL-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (INSP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADZ72263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ש
GAATCGGAGGAGCAGCCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGTAG
                                                                                                                                               AAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAAATATTAAGCAAACAGCAGCAAATGCAG
                                                                                                      ATAATTTAAATATAGAAAATGAAATAAATAATACAAATTATAATGAAGTAACAGAAGAAA
                                                                                                                                                                                                                     CTTTAAAAACGAATTTAAGAAATGGATATTTAAATAATACTTATTTTAATGAAGAAAACA 169
                                                                                                                                                                                                                                                                         CTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       falciparum
                                                                                                                                                                                                                                                                                                                              1.0%;
llarity 42.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2003EP-00292673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2003EP-00292673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                             804 A; 94 C; 378 G; 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MSP-3-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Plasmodium
                                                                                                                                                                                                                                                                                                                                    <u>.</u>.
                                                                                                                                                                                                                                                                                                                                 Score 98.6; DB Pred. No. 4.8e-0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene, MSP-3-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        falciparum
                                                                                                                                                                                                                                                                                                                                                        4.8e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chromosome 10 for preparing
                                                                                                                                                                                                                                                                                                                                                                                  DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                             T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                    1608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MSP-3-6
                                                                                                                                                                                                                                                                                                                                                                                  Length 1701,
                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of Plasmodium vaccine
                                                                                                                                                                                                                                                                                                                                    <u>,,</u>
                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                         229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10,
```

```
7532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7592
                                                                                                                                                                                                                                                                                                                                                               1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1010
8306
                                                                                                                                                                                                      8189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGACGAAGTTA 729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACAAAGAACAAGATAAAAGTAAATGATGCTACGAAAAAATCTTACAATCAGCAGGTA 7351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGCCATTGTGAAGACTTCTGATATTATTGGAAAAATGTAGATATTACAACAGAGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATCGGAAACTGAAATAGGTGAAGAATTAACTGAAAAAGTAGATGAAAAAGTACCTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCTTTACTGAAAATAAAGAACAAAAAATGAAGTACCAATGAAAATAGAAGTAGTAA
                                                                                                                                                                                                                                                                                                            CACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATTÄGTTGAAAAAGTÄGATGAACAAGTAGCTGAAGÄÄTTÄGTTGAÄÄAAGTÄGÄTGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGCAGTAGCAGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATTTGA 8068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGTTGCTGAAGAATTAATTGAAAAGGTAGCTGATGAATTAGTTGAAAAAAGTAGCTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGAAA 7948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGATGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCAAGGTCCTG---TAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAACAGCAT 7651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAAATTCTTTTGTGA 7591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>AAGTAGATGAAAAAGTAGCTGAAGAAGTAGATCAAAAAGTAGATGAAGAAGTAACTGAAG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGGAA 7531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u> AAGTAGCTGAAGAATTAGTTGAAAAAGTAGATGAAGAAGTAGCTGAAGAATTAGTTGAAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGATGGAGAAGAAGTAAAAACAGAATATGTATCTGAAAAAAATGAGGAAGTAGAAAATA
AAGTAGCTGAAGAATTAGTTGAAAAAGTAGATGAACAAGTAGTTGAAGAAGTAGCTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                            AAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCTGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGTAGATGAAGAAGTAACTGAAGAATTAATTGAAAAAGTAGATGAAGAAGTAACTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>AAGTAGCTGAAGAATTAGTTGAAAAAAGTAGATGAAAAAGTAGCTGAAGAAGTAGATCAAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGTAGCTGATGAATTAGTTGAAAAAGTAGCTGAAGAATTAGTTGAAAAAGTAGATGAAG
                                                  TAGATGAAGAAGTAGCTGAAAAAGTAGTTGAAGAAGAAGGTGAAAAAAGTACCTGAAGAAG
                                                                                                     GAAATTTGTTCAGAAC---AAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATG
                                                                                                                                                                                                   TTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAGGAAG
                                                                                                                                                                                                                                                         AAGTAGCTGAAGAAGTAGTTGAÁGAAGGTGÁAAAAGTÁCCTGAAGAAGTÁGCTGAAGAÁG
                                                                                                                                                        TAGCTGAAGAAGTAGCTGAAGAAGTAGCTGAAGAAGTAGCTGAAGAATTAGTTGAAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7768
                                                                                                                                                                                                                                                                                                                                                                                                                 8128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        409
                                                                                                                                                                                                                                                                                                              8188
     8365
                                                     1369
                                                                                                     8305
                                                                                                                                                                                                           8248
```

멍

र् 밁 S 밁 Ş 밁 5

망 5

Sequence 3579 BP; specification

1904 A;

398

Ç

552 G;

725

Η. 0

U; 0 Other;

Ś 밁 ş 멍

장 유

Ş 밁 중 음 S

음 성 밁 ş 밁 5 밁 S 밁 S 밁 S 밁 δ

```
RESULT 13
AAA70099
ID AAA70
XX AAA70
XX AAA70
DT 07-NC
XX Plas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                             The present invention describes proteins and their fragments (I) encoded CC by chromosome 2 of the human malarial parasite, plasmodium falciparum. CC Also described are: (I) nucleotide sequences (II) encoding (I); and (2) CC vaccines against p. falciparum infection comprising (I) or (II). (II) and CC (II) are useful for the development of vaccines against P. falciparum (CC immunogens comprising the sequences of (I) are useful in the detection CC immunogens comprising the sequences of (I) are useful in the detection CC immunogens or secreted or membrane proteins) can aid the identification of drugs to treat or prevent P. falciparum infection, or they can be used to identify drug resistance in P. falciparum infection, or they can be used CC encoded by it will help to expand our understanding of parasite biology, a process hampered by the complexity of the parasitic lifecycle, and CC grovide new targets for vaccine and drug development. Parasite resistance to drugs and mosquito resistance to insecticides have led to a resurgence complexity of the parasitic lifecycle, and crepresent nucleotide and protein sequences given in the present complexity. But the present of the world, and there is a pressing need for capacitic and new drugs. AAA70078 to AAA70287 and AAB18144 to AAB18352 convention, but which are not specifically mentioned within the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Proteins encoded by chromosome 2 of the human malarial parasite, plasmodium falciparum, useful as antimalarial vaccines and in the diagnosis of P.falciparum infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Plasmodium falciparum; chromosome 2;
antimalarial; malaria; protozoacide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Plasmodium falciparum chromosome 2 related DNA sequence SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAA70099;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAA70099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; Page 457-458; 577pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-365347/31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (HOFF/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (GARD/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HOPFMAN S.
CARUCCI D.
GARDNER M.
VENTER J C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGC 8425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGTTGAAGAAGTAGATGAAGAAGTAGCTGAAAAAGTAGTTGAAGAAGAAGGTGAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          дадаттатдалалатдаттасасалалалатататттсадаас 8470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standard; DNA; 3579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TÄGTTGÄAGÄÄCÄAGGTGÄAAÄAGTÄÄÄCÄÄÄÄÄÄTGATTTÄÄÄTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TACTTGAAGAAGTAATTGAAGAAGTAGTTGAAGAAGTAGCCGAAGAAGTAGCTGAAAAAA 1489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Carucci D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US026796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98US-0107131P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gardner M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Venter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           human malaria parasite; infection; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NO:232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1429
```

```
Query Match
Best Local Similarity
Matches 616; Conserv
                                                       8065
                                                                                                                                                                                                                                                                                                                                                                                                                                                     2082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7647
  2322
ATATTTCCCATACTATAATCCATTAGAACAACAGAATTATCAACTACATCATATTATAAA
                                                    TTGAAAGTTAGTACAAAATCCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAA
                                                                                                                                                                GTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGGAAGCAAAAGATGCCGGAAGCTCTTAT
                                                                                                                                                                                                                          CAAAGAAAAACATGATAAACATGTAAGAAGAATAAAAAAAGAAAATGAAGATGATGACTA
                                                                                                                                                                                                                                                                            AATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAG--GAGCTTCT
                                                                                                                                                                                                                                                                                                                                      GAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAAGAAAAAGACAAAGAAGATGACAAAGAAAAAAGACAAAGAAGATGACAAAGAAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCTGCCGGAGCCATTATCTCAAAAGCAAAGGAATGAAATGAATTCAGAGGTTGAAATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAAGAAGATGACAAAGAAAAAGACAAAGAAGATAACAAAGAAAAAAGACAAAGAAGATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAAGAAAAAGACAAAGAAGATGACAAAGAAAAATACAAAGAAGATGACAAAGAAGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAATATTGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGGAGAAGAAGATAAAGAAGACGACAAAGAAAAAAAAGACAAAGAAGATGACAAAGAAGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGAACAGATGATGAAGAAGAAGAAGTAGAAGAAACAGACCTAGACGACCAAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACAGTGGCAGTTACAAATATTAAA----AGAAATTCCGGAGTTACTGTTGAAAATTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAGAAAACAGAAAAAGACGAAGAGGAACAGATTATGAAGAAGATACAGATGATTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAAACAGAAAGAGACGAAGAAGAAACTGAAGAAGACGAAAAAGAAACAGAAGTAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGATTATGAAGAAGATACAGATGATTCAGACAAAGATGAAGAAACAAAAGTAGAAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAGACGACGAAGAAACAAAAGTAGAAGAAAAGAAAACAGAAAAAGACGAAGAGGGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTIAGACGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ÁGAÁAAAACTGAÁGACGAÁAAAGGÁACGGÁAGTATACAAÁAAAGÁAACAGATGTÁGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTGGAACAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAATCAGAAAAAGATAAAGAAGAATCAGAAAAAGACAAAGAAAAAACTGAAGAAGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAAAAGTAAATGTAACGGCAAAAGAGGGAAAAAATATTAAGCAAACAGCAGCAAATGC
                                                                                                           TGÁTGÁAAGTTTGAÁAACGAÁAAÁTTATTATCCACÁTAÁTÁTGÁCATTTGGÁCAACAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 87.4; DB 3;
Pred. No. 9e-07;
0; Mismatches 821;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 3579;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7229
2381
                                                    8124
                                                                                                                                                                                                                                                                                                                                                                                              7946
                                                                                                                                                                                                                                                                                                                                                                                                                                                     2141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7169
```

8 & 8

밁

성 유

8 8 8 8 8 8 8 8 8 8 8 8

8 8 8 B 8 B

중 음

중 음 중 음

```
RESULT 14
AAQ87587
ID AAQ87587
ID AAQ87587
XX AAQ87587
XX AAQ87587
XX AAQ87587
XX AAQ87
AC AAQ87
XX 19-DI
XX 19-DI
XX 10-DI
XX 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
  AAQ87587-89 encode polypeptides having a whole or partial epitope of structural protesin of Leucocytozoan protozoa (see AAR70491-93). The polypeptides and DNA encoding them are useful in the production of vaccines for the treatment of leucocytozoanosis of fowl. (Updated on AUG-2003 to correct OS field.)
                                                                                                                                                                                                                                                                                                                                                                                    (NISS-)
                                                                                                                                                                                                                    Immune inducing polypeptide against Leucocytozoan protozoa - production of vaccines for treatment of leucocytozoanosis in
                                                                                                                                                                                                                                                                                                                                  WPI; 1995-167252/22.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JP07089995-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    leucocytozoan protozoa; structural protein; epitope; vaccine; fowl; leucocytozoanosis; treatment; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27-AUG-2003
19-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAQ87587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Leucocytozoon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8125
                                                                                                                                                                                                                                                                                                                                                                                    DOBUTSUYO
NISSEIKEN
                                                                                                                                                                                                                                                                                                      AAR70491.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGA
                                                                                                                                                                  Page 12-14; 20pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAAGATTATGAAAATAATGATTACACAAAAAATATATTTCAGAAGTCAATGCTCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTT-TGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ĀTĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCTGAAAAACAAATTGAACATGTATATAATAAGTCTCCTGAAAAACAAATTGAACATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGTGCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCAAGTCATATATAATAATTCATCAGAAAAACAAATTGAACATGTATATAATAAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATGCATAACAATÁCAAAAGAÁCATAÁGAATTTTAAAAATACAACCGATGTAAAACAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAAGATCAACCTAATATTAAACAGGGTGTTGTAAAGGGACAAGAACCACATGTTGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TÄÄTAÄTGTTCCTTATATCTTÄÄÄAAAÄGGGGCTTGÄÄCCCAAÄÄCTCÄTÄÄCCATGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCATATTTTACAAGAGCAAGAAAAACATCACCCACAAGGTATACCAAAGGAACAACCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACAACAGCAAAATTATCACCCACATCATATTATAAAACAACAGCAAAATCATAATCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (revised)
(first en
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Leucocytozoan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93JP-00226078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93JP-00226078
                                                                                                                                                                                                                                                                                                                                                                                       SEIBUTSUGAKUTEKI KK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protozoa structural protein epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВP
                                                                                                                                                                                                                                                                                                                                                                                                                   SEIZAI
                                                                                                                                                                                                                                                                                                                                                                                                                   KYOKAI
                                                                                                                                                                                                                       useful
fowl.
                                    27-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2441
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  äΧ
                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                            S
                 S
                                              밁
                                                                          ঠ
                                                                                                          밁
                                                                                                                                     S
                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 42.4
Matches 513; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7112 AAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGCAG
                 8066 TGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAAG
                                                                                                                                                                                                                                                                                                                               7772
                                                                                                                                                                                                                                                                                                                                                                                                                                                      7652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              362
                                                                                                                                                                                                                                                                                              962
                                                                                                                                                                                                                                                                                                                                                             902
                                                                                                                                                                                                                                                                                                                                                                                                                         842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATATGTAGAAAAAGAACAAGAACATTTTAAAGAATTAGAAAAAGAAGTTTTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGCCATTGTGAAGACTTCTGATATTATTGGAAAAATGTAGATATTACAACAGAGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGAAGAACAAGATGAAGAACAAGATGAAGAAGAAGAAGAAGAAGAACAGGAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGATGAACAAAATGAAGAAGAAGAAGAAGAAGAAGAAGAACAAGAACAAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGAAGAAGAAGAAGAAGAACAAAATGAAGAACAAAATGAAGATGAACAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAATCGGAGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>AAGATGAAGAAGAAGAAGAAGAAGAACAAGATGAAGATGAAGAAGAAGAAGAAGATG</u>
                                                                                                                                                                                                                                                                                                                               TAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCGGTAGCTG
                                                                                                                                                                                                                                                                                                                                                                                          GAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGATGTTATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTAATG 771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAACAGCAT 7651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGTAGAAAGTGAACATAAAGATGATAAGAAAGAGACAAAAATAAAAAAAGCATGAAGTTG
                                                                                                           CAGTAGTTGAAGAAGAAATGGTAGAAGAAACACCTGTAGTTGAAGAAGAAATGATAGAAG
                                                                                                                                                                     ATGAAGCTACTAGAGGCCGGAATTCCGGACCAGTAGTTGAAGAAGTTGTTGAAGAAACAC 1141
                                                                                                                                                                                                    GTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGAAATCA
                                                                                                                                                                                                                                   CAACTACAAATATATTTGAAGATGAAAATAAAAATTCATCATTGAAAAAACCAGAATTAA
                                                                                                                                                                                                                                                                CCGGAGCCATTATCTCAAAAAGCAAAGAATGAAATGAATTCAGAGGTTGAAATTGAGAAGA
                                                                                                                                                                                                                                                                                                AAGTAAAAGAACAAAATGGACAAGTACAAGGAAAAACAAATGAACAAAAAGAATATATAC 901
                                                ANACACCTGTAGTTGAAGAAGAAATGATAGAAGAAACACCAGTAGTGGAAGAAGATGTCG
                                                                           CA-----GTAGCAGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATT
                                                                                                                                     ATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCTGTAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>AAGAAGAACGAGAAATAGAAATAAAAGGAGAATCAGAAGAAATAGATGAGAAAAAAATCAG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 81.8;
Pred. No. 8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ü
382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches 692;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ດ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8.8e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1686;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                  1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                 7891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                    8125
                                                                                                             1201
                                                                                                                                          8011
                                                                                                                                                                                                                                                                                                                                7831
                                                                                                                                                                                                                                                                                                                                                             961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7231
```

```
RESULT 15
ADP85917
ID ADP85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
The invention relates to a nanopore analysis system that comprises a cc nanopore device and a nanopore data analysis system. The nanopore device has a structure having an aperture. The nanopore data analysis system can compare the nanopore data points corresponding to each target polymer and cc generate nanopore data points corresponding to each target polymer and cc pattern of the data points; and analyse a distribution of target polymer cd data points in the distribution pattern. The distribution pattern analysis system is stored on cc includes data cluster(s). The nanopore data analysis system is stored on carpet polymer to polymer data analysis system is stored on cc distribution of target polymucleotide data points in the distribution cc distribution of the non-target polymucleotide data points in the distribution cc datermine a ratio between the target polymucleotide data points. It can also cc distribution of target polymucleotide data points in the distribution of target polymucleotide data points in the data points and the cc clusters; compare the distribution of the target polymucleotide data points shetween the two data clusters to a phosphorylation state standard cc distribution; and determine a ratio of phosphorylated target
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nanopore data analysis ; polymer ; polynucleotide; single-molecule resolution; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26-AUG-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADP85917;
                                                                                                                                                                                                                                                                                                                                   Disclosure; SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                Nanopore analysis system for analyzing polynucleotides includes nanopore device having structure with aperture, and nanopore data analysis system
                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2004-467656/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23-SEP-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23-SEP-2003; 2003US-00668749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US2004110205-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADP85917
                                                                                                                                                                                                                                                                                                                                                                                     that can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10-JUN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (WANG/) WANG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1262 TCGAAGAAACACCAATAGTGGAAGAAGATGTAGTAGAAGAAACTAATGTAGTTGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           standard; DNA; 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAG
                                                                                                                                                                                                                                                                                                                                                                                  generate nanopore data points
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGTTGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGATAAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGAAGAAATGGTAGAAGAACACCAGTAGTAGTAGAAGATGTAGTAGAAGAAACACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGTAGTAGAAGAAACACCAGTAGTTGAAGAAGAAGTTGTAGAAGAACACCAGTAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAGTAGAAGAACACCAGTAGTTGAAGAAGAAATGATAGAAGAAACTCCTGTAGTTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       construct
                                                                                                                                                                                                                                                                                                                                                                   polymer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2002US-0412959P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8316
                                                                                                                                                                                                                                                                                                                                 1; 17pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВP
                                                                                                                                                                                                                                                                                                                                   English
                                                                                                                                                                                                                                                                                                                                                                                     corresponding
                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                         each
                                                                                                                                                                                                                                                                                                                                                                                   iysis system
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1441
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                               밁
                                                                                                                                      밁
                                                                                                                                                                         Ş
                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       polynucleotide to non-phosphorylated target polynucleotides. It can also determine a cluster score for the target polynucleotide data points in a defined area; and compare the cluster score for the target polynucleotide data points to a cluster score for a chemical integrity standard density polynucleotide standard. The invention is useful for analysing polymers, such as polynucleotides. The inventive manopore analysis system potentially provides high speed sampling with single-molecule resolution, which may enable unprecedented dynamic range and sensitivity in analysis of samples containing charged polymers such as polynucleotides or polypeptides. The present sequence is a synthetic construct used in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8546
                                                                                                                                                                                                                                                      9026
                                                                                                                                                                                                                                                                                                                                9966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             537;
                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ш
GAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCTT
                                                           CTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAATT
                                                                                                                                                                                                               ATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATA
                                                                                                                                                                                                                                                                                                                                                                   AAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGTGATTAAGAAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTG
                                                                                                                                                                                                                                                                                            AGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1300 A; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; 0 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80.4;
No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0 T; 0 U; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .5e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             761;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                         9265
                                                                                                                                                                           9145
                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                         8965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
 RESULT 16
ADA8986/c
ID ADA898
XX ADA898
XX ADA898
XX ADA898
XX Staphy
XX Antige
KW Antiub
KW Antiub
KW Antiub
KW Bacter
KW bacter
KW bacter
KW Gastro
OS Staphy
XX Staphy
XX IUDET
CHART OS-AUG
PR 02-AUG
PR 03-AUG
PR 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                       WPI; 2003-256434/25
                                                           Foster S,
```

```
1261
                                                           1201
                                                                                          9626
                                                                                                                       1141
                                                                                                                                                                                                                                                                                                                                                                                                         9326
                                                                                                                                                                                   1081
                                                                                                                                                                                                                                                 1021
                                                                                                                                                                                                                                                                                                              961
                                                                                                                                                                                                                                                                                                                                                                          901
                                                                                                                                                                                                                                                                                                                                                                                                                                      841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                                       GAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATAAATAGAACTAATAATGTTGATTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                       TAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA 1298
                                                                                                                                                      CGGCAACTGCCACTATTGAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTTA
                                                                                                                                                                                                                                                                              ATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCTT
                                                                                                                                                                                                                                                                                                              CAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTATA 9445
                                                                                                                                                                                                                                                                                                                                                                          TGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAA
                                                           AGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAAAAAAT
                                                                                                                         9723
                                                                                                                                                      9625
                                                                                                                                                                                                                                                 1080
                                                                                                                                                                                                                                                                               9505
                                                                                                                                                                                                                                                                                                                                                                            960
                                                                                                                                                                                                                                                                                                                                                                                                                                       900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     840
```

Staphylococcus aureus antigenic partial gene sequence locus 35B ADA89806; ADA89806 standard; (first entry) DNA; 4965 ВЪ

antibacterial; neuroprotective; immunosuppressive; antiinflammatory; antiibacter; immunostimulant; ophthalmological; pathogenic microbe; bacteraemia; septic shock; organ infection; skin infection; bacterial basal colonisation; bacterial eye infection; septicaemia; tuberculosis; food poisoning; blood infection; peritonitis; endocarditis; sepsis; meningitis; pneumonia; stomach ulcer; gonorrhoea; toxic shock; necrotising fasciitis; impetigo; histoplasmosis; Lyme disease; gastro-enteritis; dysentery; shigellosis; skin disorder; gene; ds. 02-AUG-2001; 09-JAN-2002; Staphylococcus aureus 02-AUG-2002; antigenic protein; vaccine; Staphylococcus aureus; UNIV SHEFFI BIOSYNEXUS SHEFFIELD 2001GB-00018825 2002GB-00000349 2002WO-GB003606 pathogenic organism;

Mond J,

Clarke

ŝ

Mcdowell

ָש'

Brummel

~

```
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CC pathogenic microbe by administering the antiquence protein or the vaccine; CC (3) an antibody or its binding part obtainable by the method above; (4) CC preparing a hybridoma cell line producing monoclonal antibodies; (5) a CC hybridoma cell line produced by the method of (4); and (6) identifying CC opsonic antigens expressed by a pathogenic microbe. The antigenic CC proteins have antibacterial, neuroprotective, immunosuppressive, CC antiinflammatory, antiulcer, immunostimulant and ophthalmological CC activities, and can be used in vaccines. The antigenic proteins or CC vaccines can be used for immunising an animal (specifically a human) CC against a disease or condition caused by a pathogenic microbe, e.g. CC bacteraemia, septic shock, organ infection, skin infection, bacterial CC basal colonisation, bacterial eye infections, septicaemia, tuberculosis, CC endocarditis, sepsis, meningitis, pneumonia, stomach ulcers, gonorrhoea, strep throat, streptococcal-associated toxic shock, necrotising CC dysentery, shigellosis, S. aureus-associated septicaemia, food-poisoning, CC endocarditis. The present sequence represents a S. aureus partial gene CC sequence from the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
밁
                                                ş
                                                                                                                               밁
                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Simi
Matches 998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention describes an antigenic protein or its part, which is for use as a vaccine. The antigenic protein is encoded by an isolated DNA molecule of Staphylococcus aureus or S. epidermidis partial gene sequences (designated dnaSA and dna SE, respectively, and which encodes a protein expressed by a pathogenic organism. Also described: (1) a vaccine composition comprising at least one antigenic protein; (2) a method of immunising an animal against a disease or condition caused by a pathogenic protein caused by a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New antigenic polypeptides from Staphylococcus aureus or S. epidermidis, useful as a vaccine for immunizing humans against e.g. bacteremia, septic shock, septicemia, tuberculosis, meningitis, pneumonia, gonorrhea or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4965 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGATTCAAGCTACGCCAGATGCAACAGATGAAGAAAAACAAGCAGCTGATGCTGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTAATAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGAAGCTAAAGCAAATGCAGAAGCAGCGATTAATGCGGTAACACCAAAAGTTGTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATACTGAAAATGGTAAAGCAAATCAAGCCATTTCAGCAGCAACTACTAACGCACAAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG
                                                                                                                                                                                             ACAACAAAGTAAATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGACG
                                                                                                                                                                                                                                                                                                                             ATTTACAAGCTGGAAAGTCAAATGGAACTGTAGGGGCTACTGTGACTGTTGCCAAATTAA
                                                                                                                                                                                                                                                                                                                                                                                               AAAAAATGGATGTTGATGTCACTGCTTATCAAGCGGACACCCCAAGTGACAGGAGCTTTAA
   AAGACGCTGGAAAGAATTCAATTCAAAGCACGCAACCAGCAACAGCGGTTAAATCAAATG
                                                              CAMAAGCTCTTTTAGCAACCACTCAAGTGACTGCCTGCAGTGACGACGGCAGGGACAATTA
                                                                                                                                   TTACAGACGCGAAAAATAATATTACAGCTGCAACTGATGATAATGGTGTAGATCAGGCGA
                                                                                                                                                                                                                                                                   ĂTGATCĂGAACGCTĂCAACĂGĂAĞAĂAAAĞAĀGCAĞCTĂTTCAACAATTAGCAACAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1119 A; 870 C; 861 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 79.2;
Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches 1378;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           T; 0 U;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4965;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3841
                                                                                                                                                                                                                                                                      4036
                                                                                                                                                                                                                                                                                                                                                                                                      4096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4336
                                                                                                                                                                                                    4201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4216
      3916
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                     밁
                                                                                                                  á
                                                                                                                                                                                         밁
                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                   吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4682
                                                                                                                                                                                                                                                                                                                         3033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGCTACAACTGAAGAGAAAAATGCAGCAAAAAGATTTAGTTTTAAAAAGCTAAAGAAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTAAAAATGATGTTGATCAAGCTGTGACAACTCAAAATCAAGCAATTGATAATACAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTCTGGAGCGGATTAGGAAATTATCAAGGGGCTGTTTCTGTCAATAAGATTGACAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTGGAC 4741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGAACAACTAGAAAAAGCAAAGAAAAAAGAAGGAGCGGTCATTGTAAATGCTGCTTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGTTGCTGATATTCAAGGTATTACTGCAGATACAACAATTAAAGATGTTG-----CGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGATAAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAAAGATGTCAAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTACTAAATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACGTGGAAGCTAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATTAGATCAAGCTGCAGCTGATAAGAAAACACAAATAGAACAAAAACACCAAATGCATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             сестрастастите селата в предоставата в предостават предостават по предостават п
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTTAAATAATAATGCAGCAACTACTACAGGTGATGTAACTACTGCTAAAGATACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGCTAACTGAAATGCAAAATAAAATAACTGAAATACTTAATAATAATGAGACT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TIGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCAA 4801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCAAGCAATTGACCCAATTCAAGCATCAACAGATGTTAAAACGAATGCAAGAGC-GGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCAAAATATTGAAAATGCACAGTCAATCGATGATGTAAACACTGCAAAAGATAATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ĊĠĄĊŢĄĊŢĠĄĄĠĄĄĄĄĄĄĠĄĄĊĄĄĠĊĄĄĄŢĊĄĄĊĄĄGTĄGACGCĄCĄĄTTĄĄCĄCĄĄGTĄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGATGAATTAGCAACAAAAGCAAACGAACAAAAAGCGCTTATTGCACAAACTGCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGTATCAAGATATCTTAAATGCACAAACAACTAATGATGTTACGCAAATTAAAGATCAAG
ATCAAGATAGAAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATAG
                                                                TTGCTGAAGCGAAACAAAACTTGCTGAATTAAAACAAACTGCGGATCAAAATGTTAATC
                                                                                                                            ATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATG
                                                                                                                                                                                            ATGCATATAATGCTAAAGTAAACGAAGCGGATAACTCTAACGCATCGACTTCAAGTGAAA
                                                                                                                                                                                                                                                         TTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAA
                                                                                                                                                                                                                                                                                                                         AAATTAATGCAGTTAAAACATTTAGTGAGTACAAAAAAAGATGCTTTAGCTAAAATTGAAG
                                                                                                                                                                                                                                                                                                                                                                                      ATGTCGATCAATCAACAAATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACAAGAAATTAATGATGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAACAA 3094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGTACAAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAACCAGCAGGTAAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAATAATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTTCTACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----ACTAATGAAGAAAAAGGTAACGATATTGGACCAGTTAGAGCAGCATATGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4681
                                                                                                                                                                                                       2914
                                                                                                                                                                                                                                                                   5281
                                                                                                                                                                                                                                                                                                                                   2974
                                                                                                                                                                                                                                                                                                                                                                                                                                                             3034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3214
```

```
RESULT 17
AAS52179
ID AAS52
XX AAS52
XX AAS52
XX AAS52
XX I3-FE
XX XX Antis
XX Antis
XX Antis
                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
              Antisense; ds; prokaryotic cellular proliferation gene; antibiotic, antibacterial; drug design.
                                                                 Staphylococcus aureus DNA for cellular proliferation protein #596.
                                                                                                                                                                             AAS52179
                                                                                                        13-FEB-2002
                                                                                                                                                                               standard;
                                                                                                                                                                                                                                                                     ATGCAGATGCAGATGCAT 1999
                                                                                                                                                                                                                                                                                                         GTTCAGCTACTCATACTT
                                                                                                                                                                                                                                                                                                                                           AGAAAAATGCTTTGGAAGCAATCAGAGAAGTGGTTAACAAGCAAATAGAAATAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                          TTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAGGATTTGTTACCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                CTACTGTCAAAAATAGTGCGCTTGAACAACTTAAAGCACAACGTATTAATCCTGAAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AÁGACÁTTTTÁTCÁAÁAGCÁÁCTGÁAGATÁTTTCTGATCAAÁCTACÁAÁTGCÁGÁAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAACAGATGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGTAAATGTCAACGCTGATGCTACAACTGAAGAAAAAAAGAAGCGTTTACGAATGCTTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGAAGTTGAAAAAGCGAAAGCTCAAGGACTTGAAGCATTTGATAACATTCAAATCGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAATGATTAAACAAATTACAGATCAAGCTAAACAAGGTATTACTGATGCAACAACAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGGTGACAGGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAAAGAATCTATTGATCAAAGTGACCAGTTAACTGCTGAAGAAAAAACTGAAGCATTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGTAGATGCTACTGTTAAACCTAAAGCGAACCAAGCTATTGAAGTTAAAGCAGAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAATTAAGCAAGTTGACCAAAATG---TTCAAACTGCATTAGAAAGCATTAATAATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACAACAGATTTATATGCTTATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGTCGGAGTTGGAGGAGCAAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTACTTCTAAAGATGAACATTGAAGTTCATAATGACTTAGATAATAATGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAACAGAAAAACAAAAAGCTATCGAAGAATTAGAAACTGCACTAGACCAGATTGAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TĠĠATAATGGŤĠACGTTĠATGATGĊATTAACACAAĠĠTAAAGCAGCAATTGATGCTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAGAAGAAAATAATTTTCAGCTGACACTAATGCAACACAAGATGAAAAGCAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAG
                                                                                                      (first
                                                                                                        entry)
                                                                                                                                                                                                                                                                                                       6178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2497
                                                                                                                                                                                                                                                                                                                                           2017
                                                                                                                                                                                                                                                                                                                                                                              6160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2794
                                                                                                                                                                                                                                             Ś
                    ঠ
                                                               밁
                                                                                               Ś
                                                                                                                                        윩
                                                                                                                                                                    Ş
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to antisense inhibitors of genes essential to prokaryotic cellular proliferation, their use in identifying the genes, their use in the discovery of novel antibiotics, the essential genes themselves and the encoded proteins. The prokaryotes used are Escherichia coli, Staphylococcus aureus, Salmonella typhi, Klebsiella pneumoniae, Resuldomonas aeruginosa and Enterococcus faecalis. The invention is also cuseful for the identification of potential new targets for antibiotic colored to the antisense nucleic acids can also be used to identify compounds in rational drug discovery programmes. The proteins used in proliferation, to express these proteins, and to obtain compounds in rational drug discovery programmes. The compounds in rational drug discovery programmes. The contribution is a wide variety of organisms. The present sequence is also useful to screen for homologous mucleic acids which are required for cell proliferation in a wide variety of organisms. The present sequence encodes an essential prokaryotic collular proliferation protein. Note: The sequence data for this patent cold in the printed specification, but was obtained in
                                                                                                                                                                                                                                                                                                                                                        Query Match 0.8%;
Best Local Similarity 41.3%;
Matches 998; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-MAR-2000;
23-MAY-2000;
26-MAY-2000;
23-OCT-2000;
27-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             did not form part of the printed specification, electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 27; SEQ ID NO 4761; 511pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New polynucleotides for the identification and development antibiotics, comprise sequences of antisense nucleic acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2001-611495/70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Haselbeck R,
Yamamoto RT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Staphylococcus aureus
                               4022
                                                                                                                                                                                                                                                                                      3659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ELITRA PHARM
                                                                                                                                                                                                                                                                                                                        TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA
ATGAAGCTAAAGCAAATGCAGAAGCAGCGATTAATGCGGTAACACCAAAAGTTGTGAAGA 3896
                                                                                           TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCC
                                                                                                                                                                                                                                                   AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAAGCAGTTA
                                                                                                                                                                                                                                                                                      TTAATAAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                 7434 BP; 3197 A; 1326 C; 1298 G;
                             <u>AAAAAATGGATGTTGATGTCACTGCTTATCAAGCGGACACCCAAGTGACAGGAGCTTTAA</u>
                                                                                                                                          ATACTGAAAATGGTAAAGCAAATCAAGCCATTTCAGCAGCAACTACTAACGCACAAGTTG
                                                                                                                                                                            AAGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG
                                                                                                                                                                                                               AGATTCAAGCTACGCCAGATGCAACAGATGAAGAAAAACAAGCAGCTGATGCTGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000US-0206848P
2000US-0207927P
2000US-0242578P
2000US-0253625P
2000US-0257931P
2001US-0269308P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001WO-US009180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ohlsen
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ę
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zyskind
                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                          Score 79.2; DB 4;
Pred. No. 4.4e-05;
                                                                                                                                                                                                                                                                                                                                                         Mismatches 1378;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ä,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wall
                                                                                                                                                                                                                                                                                                                                                                                                                                  1613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'n
                                                                                                                                                                                                                                                                                                                                                                                                                                  T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                             Length 7434;
                                                                                                                                                                                                                                                                                                                                                                                                                                 U; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                  Other
                                                                                                                                                                                                                                                                                                                                                           42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Carr
                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ફ
```

4081

3778

3838 4021

CAGTACAAAAGTTCAACAACTACGAAGCCTGATAAAAAAGCAAAAAGCTAAAAGCTAAAAAAGCTAAAAGCTTCATGAAATCCTGTTAAGAAACCAGCAGCAGGTAAAAAAGCAGCAGCAGGTAAAAAAGCAGCAGCAGGTAAAAAAGCAGCAGCAGGTAAAAAAGCACAACACCAAATGAAACACAACAACACCAAATGAAACACAACACCAAATGAAACACAACACCAAATGAAACACAACAACAACAACAACAACAACAACAACAACAAC	4553 TTCAAGCAATTGAACCCAATTCAAGCATCATCAACAGATGTTAAAACGAATGCAAGAGC-GGAA 4611 4742 TTGCTATCAGCAAAGATGCTTTTCAAGGAATGGGATCTGGAGCATGGCAAGACTTATCAA 4801	AGATGAATTAAATGTGGAGGCAAAATCAATCTGTTATTGTTGTAAAAGCGCTTATTGCACAAACTGCAGATG AGAACATGTAAATGTGGAAGCAAACCAAAAAGCGCTTATTGCACAAAACTGCAGATG CGGTTGCTGGAACGGATAAATCCGCTGGAGGAGGAGTAGCTATTGCAGTCAATACTGTTAAAA	ACGTGGAAGCTAGGGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCATTG	4082 ATTTACAAGCTGGAAAGTCAAATGGAACTGTAGGGGCTACTGTGACTGTTGCCAAATTAA 4141
Db 5858 AÁGACÁTTTTÁTĆAAÁAĠCAÁCTĠAAGATATTCTGATCAAÁCTACÁAÁTGĆÁĠÁAATCG 5917 Qy 6041 ATATTACTACTGAAGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAATCTTAATA 6100	OY 5801 TAGCAGTGAATAGATTGTAAATAGTAATAGCGATAGCAGAATTAAATCACTG 5860	Oy 5642 TAGCAGTTAATAAATTACACAAATACTTCTGCACATATAAAAATAGTACTCAAAATG 5701 [Qy 5162 AGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAGATCAAAAACAATAAATA

중 음

B & B & B & B

8 8 8 8

ঠ ৪

১ ৪ ১

```
RESULT 18
ABT14965
                       Ś
                                                           吊
                                                                                          Ś
                                                                                                                                                                                                               The invention relates to a novel method for identifying, isolating and CC producing hyperimmune serum-reactive antigens from a pathogen, tumour, CC allergen, a tissue or host prone to auto-immunity, where the antigens are used in a vaccine, comprises providing antibody preparation from a plasma CC pool of a type of animal, or individual sera with antibodies against the specific pathogen, tumour, allergen, tissue or host prone to auto-immunity. The hyperimmune serum-reactive antigens comprising any of the CC sequences of 53-2261 amino acids fully defined in the specification, CC or that hyperimmune fragments are useful for the manufacture of a CC pharmaceutical preparation, particularly a vaccine against useful coccal infections or colonisation against S. aureus or S. epidermidis. The CC infections or colonisation against S. aureus or S. epidermidis. The CC preparation of antibodies is useful for the manufacture of a medicament CC preparation of antibodies is useful for the manufacture of a medicament CC preparation or colonisation or colo
                                                                                                                                                                                                               Sequence 7434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 7; Page 179-180; 252pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Identifying, isolating and producing hyperimmune serum-reactive antigens from a pathogen, for preparing vaccine or medicament for treating or preventing e.g. staphylococcal infections, comprises providing antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2003-075410/07.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Meinke A, Nagy E,
Minh DB, Vytvytska
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26-JAN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-JAN-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200259148-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Antibacterial; virucide; fungicide; protozoacide; cytostatic; anti-
hyperimmune; serum-reactive; antigen; pathogen; tumour; allergen;
auto-immunity; vaccine; staphylococcal infection; antibody; cancer;
autoimmune disease; HIV; hepatitis; gene; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               06-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABT14965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABT14965 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pathogen
                                                                                                                                                                                                                                                   invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CIST-)
                                                                                                                                     Local Sin
                         3842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CISTEM BIOTECHNOLOGIES
                                                                                                                                                      Similarity
AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTA
                                                          TTAATAAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        specific
                                                                                            TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA
                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001AT-00000130.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2002WO-EP000546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first
                                                                                                                                                                                                             B₽;
                                                                                                                                                                                                           3196 A; 1327 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      antigen related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                o, von
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entry)
                                                                                                                                                    0.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ahsen U, Klade C, Henics T, Etz H, Dryla A, Weichhart T,
                                                                                                                                   0
                                                                                                                               Score 79.2; DB 8;
Pred. No. 4.4e-05;
D; Mismatches 1378;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GMBH
                                                                                                                                                                                                             1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      staphylococcal DNA SEQ
                                                                                                                                                                                                           9
                                                                                                                                                                                                             1613
                                                                                                                                                                                                           T; 0
                                                                                                                                                                      Length 7434;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cytostatic; anti-HIV;
                                                                                                                                   Indels
                                                                                                                                                                                                           U; 0 Other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zauner W;
Hafner M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ij
                                                                                                                                 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        201.
                                                                                                                                 Gaps
                                                           3718
                                                                                              3841
                                                                                                                                 ű
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
   밁
                             S
                                                                           밁
                                                                                                          á
                                                                                                                                                   밁
                                                                                                                                                                              र्
                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                     몽
                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       맑
                                      4922
                                                                             4721
                                                                                                                                                    4666
                                                                                                                                                                                                                              4612
                                                                                                                                                                                                                                                                 4742
                                                                                                                                                                                                                                                                                                    4553
                                                                                                                                                                                                                                                                                                                                        4682
                                                                                                                                                                                                                                                                                                                                                                             4493
                                                                                                                                                                                                                                                                                                                                                                                                                  4622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3719
                                                                                                                4862
                                                                                                                                                                                         4802
                                                                                                                                                                                                                                                                                                                                                                                                                                                       4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4142
                                                                                                                                                                                                                                                           TTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCAA
                                                                                                                                                                                                                                                                                                                                     CGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGACGCTGGAAAGAATTCAATTCAAAGCACGCAACCAGCAACAGCGGTTAAATCAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACAACAAAGTAAATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAAATGGATGTTGATGTCACTGCTTATCAAGCGGACACCCAAGTGACAGGAGCTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATTCAAGCTACGCCAGATGCAACAGATGAAGAAAAAACAAGCAGCTGATGCTGAAGCAA
   CAGTACAAAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAACCAGCAGGTAAAAAAG
                                      CGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTACAG
                                                                             GTTTAAATAATATTAATGCAGCAACTACTACAGGTGATGTAACTACTGCTAAAGATACAG
                                                                                                                CAMATAATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTTCTACGG
                                                                                                                                                                                     ATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGAACG
                                                                                                                                                                                                                              TTGCTAACTGAAATGCAAAATAAATAACTGAAATACTTAATAATAATGAGACT-----
                                                                                                                                                                                                                                                                                                       TTCAAGCAATTGACCCAATTCAAGCATCAACAGATGTTAAAACGAATGCAAGAGC-GGAA
                                                                                                                                                                                                                                                                                                                                                                             ATCAAAATATTGAAAATGCACAGTCAATCGATGTAAACACTGCAAAAGATAATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                    ATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGACTACTGAAGAAAAAGAACAAGCAAATCAACAAGTAGACGCACAATTAACACAAGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGATGAATTAGCAACAAAAGCAAACGAACAAAAAGCGCTTATTGCACAAACTGCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGAACAACTAGAAAAAGCAAAGAAAAAAGAAGGAGCGGTCATTGTAAATGCTGCTTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGTTGCTGATATTCAAGGTATTACTGCAGATACAACAATTAAAGATGTTG-----CGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGATAAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTATCAAGATATCTTAAATGCACAAACAACTAATGATGTTACGCAAATTAAAGATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAMAGATGTCAMAGGAAGTTCTGATCTAGCAMAAGMATATCAGGCTTTACTAMATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGCTACAACTGAAGAGAAAATGCAGCAAAAGATTTAGTTTTAAAAGCTAAAGAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACGTGGAAGCTAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTAAAAATGATGTTGATCAAGCTGTGACAACTCAAAATCAAGCAATTGATAATACAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTCTGGAGCGGGATTAGGAAATTATCAAGGGGGCTGTTTCTGTCAATAAGATTGACAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTACAGACGCGAAAAATAATTACAGCTGCAACTGATGATAATGGTGTAGATCAGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGATCAGAACGCTACAACAGAAGAAAAAGAAGCAGCTATTCAACAATTAGCAACAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTTAÇAAGCTGGAAAGTÇAAATGGAACTGTAGGGGCTACTGTGACTGTTGCCAAATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGAAGCTAAAGCAAATGCAGAAGCAGCGATTAATGCGGTAACACCAAAAGTTGTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATACTGAAAATGGTAAAGCAAATCAAGCCATTTCAGCAGCAACTACTAACGCACAAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGAAAGTGGAAGGAAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG
                                                                                                                                                    - ACTAATGAAGAAAAAGGTAACGATATTGGACCAGTTAGAGCAGCATATGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                               4552
                                                                                                                                                                                                                                                                                                                                                                                                                                                         4492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3778
   4840
                                        4981
                                                                             4780
                                                                                                                  4921
                                                                                                                                                    4720
                                                                                                                                                                                                                              4665
                                                                                                                                                                                                                                                                   4801
                                                                                                                                                                                                                                                                                                      4611
                                                                                                                                                                                                                                                                                                                                                                                                                    4681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3838
```

Ş

```
4961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5402
5858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAATTAAGCAAGTTGACCAAAATG---TTCAAACTGCATTAGAAAGCATTAATAATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAGAAGAAAAATAATATTTCAGCTGACACTAATGCAACACAAGATGAAAAAGCAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTACACAATTCCAACAGGTAAAAAGAATCAGCTACAACAGATTTATATGCTTATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGCTGAAGCGAAACAAAACTTGĆTGAATTAAAACAAACTGCGGATCAAAATGTTAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAAACAGTAAAATTACAACGGCGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGCATATAATGCTAAAGTAAACGAAGCGGATAACTCTAACGCATCGACTTCAAGTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATTAATGCAGTTAAAACATTTAGTGAGTACAAAAAAGATGCTTTAGCTAAAATTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACAAGAAATTAATGATGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAACGAAGGTAAATCCTTTTAGTGGAAAAGAATACAAAGTCAATGTACAAGCTTTGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGACAGGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGTAGATGCTACTGTTAAAACCTAAAGCGAACCAAGCTATTGAAGTTAAAGCAGAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAAATG 5701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TĠĠATĀATĠĠŤĠACĠTTĠATĠAŤĠĊATTĀAĊĀĊAĠGTĀĀĀĠĊĀĠĊĀĀŤTĠATĠCTĀTTC 5497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGCTACTTCTAAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAAGATAGAAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTCGATCAATCATCAACAAATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAATCG
AAGACATTTTATCAAAAGCAACTGAAGATATTTCTGATCAAACTACAAATGCAGAAATCG
                                                                                                                                                                                               CAACAGAAAAACAAAAAGCTATCGAAGAATTAGAAACTGCACTAGACCAGATTGAAGCAG
                                                                                                                                                                                                                                                                                                                               CGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                 CTGAAGTTGAAAAAGCGAAAGCTCAAGGACTTGAAGCATTTGATAACATTCAAATCGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAATGATTAAACAAATTACAGATCAAGCTAAACAAGGTATTACTGATGCAACAACAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGAAAGAATCTATTGATCAAAGTGACCAGTTAACTGCTGAAGAAAAAACTGAAGCATTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATT
                                                                                                                             GTGTAAATGTCAACGCTGATGCTACAACTGAAGAAAAAAGAAGCGTTTACGAATGCTTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5140
5917
                                                                  6040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5800
```

유성

8 8 8 8 8

음 성 음

8 8 8 8

유 성

AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTA

AGATTCAAGCTACGCCAGATGCAACAGATGAAGAAAAACAAGCAGCTGATGCTGAAGCAA

3901

3719

음 성

음 성 음

В

중 음 중

중 유

S

음 성

8 8 8 8 8

```
RESULT 19
ACF73459
ID ACF73
XX ACF73
XX ACF73
XX ANTID
XX MASIC
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
밁
                                                     á
                                                                                                              Query Match
Best Local Sim
Matches 998;
                                                                                                                                                                                                                                                                             The invention relates to novel genes and encoded proteins from Staphylococcus aureus. A composition comprising the S. aureus protein, a nucleic acid encoding the protein, or an antibody to the protein, is useful as a pharmaceutical, particularly as a vaccine for treating or preventing infection due to Staphylococcus bacteria, specifically an infection caused by S. aureus. The composition is particularly useful for creating or preventing sepsis in a patient. The composition can also be used for diagnostics. The protein is also used in an assay for enzymatic studies and as a target for antibiotics. This sequence represents one of the novel S. aureus genes of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New Staphylococcus aureus preventing Staphylococcal S. aureus, e.g. sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Staphylococcus aureus DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACF73459;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACF73459
                                                                                                                                                                                                                                Sequence 7434 BP; 3195 A; 1326 C; 1300 G; 1613 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Masignani V,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-MAR-2001; 2001GB-00007661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27-MAR-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200294868-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                enzymatic assay; antibiotic target; gene; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Antibacterial; vaccine; gene therapy; infection; sepsis; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHIR-) CHIRON SPA
                                                                                                                                            Match 0.8%;
Local Similarity 41.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2003-120786/11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABM71899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAAATCTTAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 2277; 49pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAGGATTTGTTACCAATA 6160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTACTGTCAAAAATAGTGCGCTTGAACAACTTAAAGCACAACGTATTAATCCTGAAGTTA
                                                        TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA 3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGCAGATGCAGATGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTCAGCTACTCATACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAAAATGCTTTGGAAGCAATCAGAGAAGTGGTTAACAAGCAAATAGAAATAATTAAAA
     TTAATAAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG
                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2002WO-IB002637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mora M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scarselli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein, useful as a vaccine for treating or infection, specifically an infection caused |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6178
                                                                                                                    0
                                                                                                                                               Score 79.2; DB 8;
Pred. No. 4.4e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₽P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          English.
                                                                                                                       Mismatches 1378;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3
                                                                                                                                                                       Length 7434;
                                                                                                                          Indels
                                                                                                                       42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6100
           3718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
```

B & B & B & B & S

4812 TIGCTAACTGAAATGCAAAATAACTGAAATTACTTAATAATAATAATGAGACT 4665 4802 ATGACACGATTGCAAAGGTGAATAAAGAATTTCTGCTGATTAATAATGTGAACG 4861	ATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAATTCATG	4442 AAGATAAAAAATATTTAGAAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATACGA 4501	4262 GTTCTGGAGCGGGATTAGGAAATTATCAAGGGCCTGTTTCTGTCAATAAGATTGACAATG 4321 4139 CTAAAAATGATGTTGATCAAGCTGTGACAACTCAAAATCAAGCAATTGATAAAACTG 4198 4322 ACGTGGAAGCTAGCGTTGATAAATCTTCCATCGAAGGAGCTAAATGAATG	3959 ATGATCAGAACGCTACAACAGAAGAAAAGAAGCAGCTATTCAACGATTAAGCAACAACGCAG 4018 4142 ACAACAAAGTAAATGCTTCTATTAGTGGTGGTGGGAGAATATACTAACGTTAATCGAGCGGACG 4201	AAGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG ATACTGAAAATGGTAAAGCAAAATCAAGCCATTTCAGCAGCACCACTACTAACGCACAAGTTG TGAACAATGAAATTCTGCAAAATCAAGCCATTTCAGCAGCACCACTACCTAACGCCACAAGTTG TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGAAGTTGTGAAGCC TGAACAATGAAGCAAATCAGAAAATAATACAGTAACACCAAAAATTGTGAAGCAAAACTTAAATGCCGTTAACACCCAAAAATTGTGAAGCAAACCAGAAACTTTTAAAAAATTGATGTGAAACCAGCCTAAAGTTGAAACCAAATTTAAAAAATTGAATCAAATTGATCAAATTAAAAATTGAAGCAAACCAAAATGTTATCAAATTAAAATTTACAAGCCGCTAAAAGATTGAATCAAATTGAATCAAATTGAATCAAATTGAATCAAATTGAATCAAATTGAATCAAATTGAATCAAATTGAATCAAATTGAATCAAATTGAATCAAATTGAACTGTAGCGAAACCAAATGTTACCAAATTAAAATTTAAAATTTAAAATTTAAAATTTAAAATTTAAAA
Qy 5861 CGAAGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTATGCAAGAA 5920	Qy 5702 TACGAAATGCTTTGGTAAAAAGCAAATCTCATCTA 5740	OY 522 AMARIAN COMMANDATION OF THE CONTROL OF THE	5201 AAGCTACTTCTAAAGATGACATTGAAATTCATAATGACTTAGATAATAATAACG 5402 CAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAAGGAGCCTTCTGCAAGTACTAACCT 5261 ATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACCACAGATTTATATGCTATGCAG 5462 TGAATAAGACAGTTTCTTCTCCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAG 5462 TGAATAAGACAGTTTCTTCTCCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAG 5321 ATCAGAAGAAAAATAATATTTCAGCTGACACTAATGCAACACAAGATTAAAAGCAACAAG	Qy 5222 TTGCCGGAAATGCAAATGGAGGAAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAA 5281	Qy 4982 GAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAAGCTTTGAATG Db 4841 AATTAGATCAAGCTGCAGCTGATAAGAAAACACAATAAATA

片

8 8 8 8 8

```
ARSSULT 20
ARASS5232
ID ARASS5
XX ARSS5
XX ARSS5
XX ARTIE
DE Staph
XX ARTIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                           The invention relates to antisense inhibitors of genes essential to prokaryotic cellular proliferation, their use in identifying the genes, their use in the discovery of novel antibiotics, the essential genes themselves and the encoded proteins. The prokaryotes used are Escherichia coli, Staphylococcus aureus, Salmonella typhi, Klebsiella pneumoniae, Pseudomonas aeruginosa and Enterococcus faecalis. The invention is also useful for the identification of potential new targets for antibiotic development. The antisense nucleic acids can also be used to identify proteins used in proliferation, to express these proteins, and to obtain antibodies capable of binding to the expressed proteins. The proteins can be used to screen compounds in rational drug discovery programmes. The used to screen compounds in rational drug discovery programmes. The can be used to screen compounds in rational drug discovery programmes. The concleic acids which are required for cell proliferation in a wide variety of organisms. The present sequence encodes an essential prokaryotic cellular proliferation portein. Note: The sequence data for this patent clid not form part of the printed specification, but was obtained in the content of the printed specification, but was obtained in the content of the printed specification, but was obtained in the content of the printed specification at the content of the printed specification of the printed specification at the content of the printed specification of the printed specification at the content of the printed specification of the printed sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-MAR-2000; 2000US-0191078P.
23-MAY-2000; 2000US-0206848P.
26-MAY-2000; 2000US-0207727P.
23-OCT-2000; 2000US-0242578P.
27-NOV-2000; 2000US-0253625P.
22-DEC-2000; 2000US-0257931P.
16-FEB-2001; 2001US-0269308P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200170955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Antisense; ds;
antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAS55232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAS55232 standard; DNA; 7437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Haselbeck
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-MAR-2001; 2001WO-US009180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New polynucleotides for the identification and antibiotics, comprise sequences of antisense nu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ELIT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001-611495/70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ELITRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Z Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCAGATGCAGATGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTCAGCTACTCATACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTAACGAAGACTTATCACAAAAAAGAAAATAAGTAATAAAAAAGGATTTGTTACCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTACTGTCAAAAATAGTGCGCTTGAACAACTTAAAGCACAACGTATTAATCCTGAAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAAAATGCTTTGGAAGCAATCAGAGAAGTGGTTAACAAGCAAATAGAAATAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 8869; 511pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ohlsen
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      prokaryotic
drug design.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PHARM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zyskind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cellular proliferation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cellular proliferation protein #1544.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ä,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wall
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            development
ucleic acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Trawick
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene; antibiotic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ď,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   얁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Carr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ପ୍ର
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5977
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                      S
                                                                                                                                                       밁
                                                                                                                                                                               Ş
                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                             밁
δ
                                    밁
                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3782
                                                                                                                                                                                                                                                                             4319
                                                                                                                                                                                                                                                                                                                                                                    4382
                                                                                                                                                                                                                                                                                                                                                                                                    4199
                                                                                                                                                                                                                                                                                                                                                                                                                                4322
                                                                                                                                                                                                                                                                                                                                                                                                                                                              4139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3959
                                    4553
                                                                                                                           4622
                                                                                                                                                       4433
                                                                                                                                                                                     4562
                                                                                                                                                                                                                 4373
                                                                                                                                                                                                                                               4502
                                                                                                                                                                                                                                                                                                          4442
                                                                                                                                                                                                                                                                                                                                        4259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7437 BP; 3199 A; 1326 C; 1298 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                ACGTGGAAGCTAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTCTGGAGCGGGATTAGGAAATTATCAAGGGGCTGTTTCTGTCAATAAGATTGACAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGACGCTGGAAAGAATTCAATTCAAAGCACGCAACCAGCAACAGCGGTTAAATCAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAMAAGCTCTTTTAGCAACCACTCAAGTGACTGCAGTGACGACGGGGGGGACAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTACAGACGCGAAAAATAATATTACAGCTGCAACTGATGATAATGGTGTAGATCAGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAACAAAGTAAATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGATCAGAACGCTACAACAGAAGAAAAAGAAGCAGCTATTCAACAATTAGCAACAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAATGGATGTTGATGTCACTGCTTATCAAGCGGACACCCAAGTGACAGGAGCTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGAAGCTAAAGCAAATGCAGAAGCAGCGATTAATGCGGTAACACCAAAAGTTGTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATACTGAAAATGGTAAAGCAAATCAAGCCATTTCAGCAGCAACTACTAACGCACAAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGATTCAAGCTACGCCAGATGCAACAGATGAAGAAAAACAAGCAGCTGATGCTGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAATAAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG
      TTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCAA
                                     TTCAAGCAATTGACCCAATTCAAGCATCAACAGATGTTAAAACGAATGCAAGAGC-GGAA
                                                           CGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTGGAC
                                                                                               ATCAAAATATTGAAAATGCACAGTCAATCGATGATGTAAACACTGCAAAAGATAATGCAA
                                                                                                                          ATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTCATG
                                                                                                                                                         CGACTACTGAAGAAAAAAAACAAGCAAATCAACAAGTAGACGCACAATTAACACAAGGTA
                                                                                                                                                                                    CGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAAA
                                                                                                                                                                                                                   AAGATGAATTAGCAACAAAAGCAAACGAACAAAAAGCGCTTATTGCACAAACTGCAGATG
                                                                                                                                                                                                                                               AGGAACAACTAGAAAAAGCAAAGAAAAAAGAAGGAGCGGTCATTGTAAATGCTGCTTTAT
                                                                                                                                                                                                                                                                              CAGTTGCTGATATTCAAGGTATTACTGCAGATACAACAATTAAAGATGTTG-----
                                                                                                                                                                                                                                                                                                          AAGATAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATACGA
                                                                                                                                                                                                                                                                                                                                        CGTATCAAGATATCTTAAATGCACAAACAACTAATGATGTTACGCAAATTAAAGATCAAG
                                                                                                                                                                                                                                                                                                                                                                    CCAAAGATGTCAAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTACTAAATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                    GTGCTACAACTGAAGAGAAAAATGCAGCAAAAGATTTAGTTTTAAAAAGCTAAAGAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTAAAAATGATGTTGATCAAGCTGTGACAACTCAAAATCAAGCAATTGATAATACAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTTACAAGCTGGAAAGTCAAATGGAACTGTAGGGGCTACTGTGACTGTTGCCAAATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 79.2; DB 4;
Pred. No. 4.4e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches 1378;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1614 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 7437;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3718
                                                                                                                                                                                                                                                                                                                                                                         4441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3838
          4801
                                       4611
                                                                      4741
                                                                                                  4552
                                                                                                                              4681
                                                                                                                                                            4492
                                                                                                                                                                                          4621
                                                                                                                                                                                                                      4432
                                                                                                                                                                                                                                                    4561
                                                                                                                                                                                                                                                                                 4372
                                                                                                                                                                                                                                                                                                              4501
                                                                                                                                                                                                                                                                                                                                          4318
                                                                                                                                                                                                                                                                                                                                                                                                       4258
                                                                                                                                                                                                                                                                                                                                                                                                                                   4381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ú
```

TTGCTAACTGAAATGCAAAATAAAATAACTGAAATACTTAATAATAATGAGACT---

S

음 성

밁 S 밁 δ 밁

```
4781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4961
CTGAAGTTGAAAAAGCGAAAGCTCAAGGACTTGAAGCATTTGATAACATTCAAATCGACT
                                                           TAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTG
                                                                                                                          CAATGATTAAACAAATTACAGATCAAGCTAAACAAGGTATTACTGATGCAACAACAACTG
                                                                                                                                                                                                                                                     CGAAAGAATCTATTGATCAAAGTGACCAGTTAACTGCTGAAGAAAAAACTGAAGCATTAG
                                                                                                                                                                                                                                                                                                                                                                                      AAGTAGATGCTACTGTTAAACCTAAAGCGAACCAAGCTATTGAAGTTAAAGCAGAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAATTAAGCAAGTTGACCAAAATG---TTCAAACTGCATTAGAAAGCATTAATAATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCAGAAGAAAAATAATATTTCAGCTGACACTAATGCAACACAAGATGAAAAAGCAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGCATATAATGCTAAAGTAAACGAAGCGGATAACTCTAACGCATCGACTTCAAGTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGTCGATCAACAACAAATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGTACAAAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAACCAGCAGGTAAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTTAAATAATATTAATGCAGCAACTACTACAGGTGATGTAACTACTGCTAAAGATACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAATAATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTTCTACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ----ACTAATGAAGAAAAAGGTAACGATATTGGACCAGTTAGAGCAGCATATGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGAACG
                                                                                                                                                                                      TTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTG
                                                                                                                                                                                                                                                                                                                    TACGAAATGCTTTGGTAAAAAG------CAAATCTCATTCATCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGATAATGGTGACGTTGATGATGĆATTÁAĆACAAGGTAAAGĆAGĆAATTGATGĆTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACAACAGATTTATATGCTTATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGCTACTTCTÁAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCAAGATAGAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGCTGAAGCGAAACAAAACTTGCTGAATTAAAACAAACTGCGGATCAAAATGTTAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAATTAATGCAGTTAAAAACATTTAGTGAGTACAAAAAAGATGCTTTAGCTAAAATTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACAAGAATTAATGATGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATTAGATCAAGCTGCAGCTGATAAGAAAACACAAATAGAACAACACCAAATGCATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5161
   5737
                                                                                                                             5677
                                                                                                                                                                                            5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4840
```

8 8 8 8

음 성 음

ঠ 🖁 ঠ

밁

중 유

ð

8 8 8 8

В 5 밁

S 밁 ð 片 Ş

S

ફ

6336 AATCGGAGTAGTAGGTTCTGTTGGTGGTTGGTGGAAATGTAGGAGTAGGAGCTTCTTCTGA

0

Score 77; DB 12; I Pred. No. 0.00031; D; Mismatches 310;

Length 204803; Indels

0

Gaps

0

6395

Query Match 0.8%; Best Local Similarity 45.9%; Matches 263; Conservative

```
RESULT 21
ADQ97348
ID ADQ9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                     The present invention relates to cancer associated sequences (ADQ97025-ADQ98004). The sequences are useful for the diagnosis, prevention and/or treatment of cancer, such as leukemia and lymphoma. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic formate directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                   New isolated cancer associated nucleic acids comprising at least 10 contiguous nucleotides, useful for diagnosing, preventing and/or treating cancers such as leukemia and lymphoma.
 Sequence
                                                                                                                         Claim 1; SEQ ID NO 325; 199pp; English.
                                                                                                                                                                                                                                      Morris DW,
                                                                                                                                                                                                                                                                                             27-DEC-2002; 2002US-00330773
                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                  Cytostatic; Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mouse cancer associated sequence MD08-036, SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-OCT-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADQ97348
                                                                                                                                                                                                                                                                                                                      22-DEC-2003; 2003WO-US041389
                                                                                                                                                                                                                                                                                                                                                  22-JUL-2004
                                                                                                                                                                                                                                                                                                                                                                              WO2004060304-A2
                                                                                                                                                                                                                                                                  (SAGR-) SAGRES DISCOVERY INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5861
 204803 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGCAGATGCAGATGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTCAGCTACTCATACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAAAATGCTTTGGAAGCAATCAGAGAAGTGGTTAACAAGCAAATAGAAATAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ТТААССБААСТТАТСАСАААААБСААААТААСТААТАААААААСБАТТТСТТАССВАТА 6160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTACTGTCAAAAATAGTGCGCTTGAACAACTTAAAGCACAACGTATTAATCCTGAAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGACATTTTATCAAAAGCAACTGAAGATATTTCTGATCAAACTACAAATGCAGAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAACAGAAAAACAAAAAGCTATCGAAGAATTAGAAACTGCACTAGACCAGATTGAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGTAAATGTCAACGCTGATGCTACAACTGAAGAAAAAGGAAGCGTTTACGAATGCTTTAG
                                                                                                                                                                                                                                      Malandro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first
                                                                                                                                                                                                                                                                                                                                                                                                                                  Therapy; cancer; leukemia; lymphoma; Mouse;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA;
55167 A; 44951 C; 46757 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entry
                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               204803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6055
 55510 T;
 0
ď
                                                                                                                                                                                                                                                                                                                                                                                                                                     Q.
 2418
 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6040
```

```
RESULT 22
AAA70259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                      (HOFF/) HOFFMAN S.
(CARU/) CARUCCI D.
(GARD/) GARDNER M.
(VENT/) VENTER J C.
                                                                                                                                                                                                                                                          Plasmodium falciparum; chromosome 2; human malaria parasite; vaccine; antimalarial; malaria; protozoacide; infection; insecticide; ds.
                                                                                                                                                                                                                                                                                                                                                                       AAA70259 standard; DNA; 4677
                                                                                                                                                                                   11-MAY-2000
                                                                                                                                                                                                                                    Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                       07-NOV-2000
                                                                                                                                                                                                                                                                                                                                               AAA70259
                                                                                                                                                           05-NOV-1999;
                                                                                                                                                                                                                                                                                               Plasmodium
Proteins encoded by chromosome
                         WPI; 2000-365347/31
                                                                                                                                    05-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      92136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6456
                                               ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTAGTAGTACACTATATTCTAATTCATAA 92588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATAAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCAGCÁGCÁGCAGCAGTAGCAGTAGCAGCÁGTAGCAGCÁGTAGCAGCAGCAGCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TACCAATATTATAAAAAGAAATACCAAGACAAGAGTTGGAAAAACTACAATGTCTGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGAGTGAAAAATTCTAAAATTATGACTCGAAACAAGTTAGATGTAATAGCAGAAAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCAGCAGCAGCAGCAGCAGCAGTAGCAGTAGCAGCAGCAGCAGCAGCAGCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCAGTAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGTAGCAGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGTAGCAGCAGCAGCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGAGTGGTTTCTGTCAATAATATTGCAAATAA 6908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTAGCAGTAGCAGCAGCAGCAGCAGCAGCAGTAGCAGTAGCAGTAGCAGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCAGCAGCAGCAGCAGTAGCAGTAGCAGCAGCAGCAGCAGTAGCAGTAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAAGGAGCTGGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTAGCAGCAGTAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGTAGCAGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTCGGAGTCGCAGCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGTTTCGGAGAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGG
                                                                                                                                                                                                                                                                                              falciparum chromosome 2 related DNA sequence
                                                Carucci
                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                            99WO-US026796
                                                                                                                                    98US-0107131P
                                                Ó
                                                Gardner
                                                                                                                                                                                                                                                                                                                                                                        ВP
  N
                                                Σ,
  Ġ.
  the human malarial
                                                  Venter
                                                ď
  parasite
                                                                                                                                                                                                                                                                                                SEQ
                                                                                                                                                                                                                                                                                               ID NO:392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       92135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       92075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      92315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      92435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      92375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       92259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6875
```

Plasmodium falciparum, useful as antimalarial vaccines diagnosis of P.falciparum infection. and ä

Disclosure; Page 565-566; 577pp; English

CC by chromosome 2 of the human malarial parasite, Plasmodium falciparum.

CC Also described are: (1) nucleotide sequences (II) encoding (I); and (2)

CC vaccines against P. falciparum infection comprising (I) or (II) and

CC (II) are useful for the development of vaccines against P. falciparum

CC infection. (I) and polyclonal antisera or a monoclonal antibody raised to

CC immunogens comprising the sequences of (I), are useful in the detection

CC of infection with P. falciparum. Furthermore, (I) (especially when they

CC are rifins or secreted or membrane proteins) can aid the identification

CC of drugs to treat or prevent P. falciparum infection, or they can be used

CC to identify drug resistance in P. falciparum. Sequencing of the

CC encoded by it will help to expand our understanding of parasite biology,

CC a process hampered by the complexity of the parasitic lifecycle, and

CC provide new targets for vaccine and drug development. Parasite resistance

CC of malaria in many parts of the world, and there is a pressing need for

CC vaccines and new drugs. AAA70078 to AAA70287 and AAB18144 to AAB18352

CC represent nucleotide and protein sequences given in the present

CC sneaffication, but which are not specifically mentioned within the present invention describes proteins and their fragments (I) encoded chromosome 2 of the human malarial parasite, Plasmodium falciparum.

Sequence 4677 BP; 2106 A; 402 C; 966 G; 1203 T; 0 U; 0 Other

Length 4677;

B Query Match Best Local Similarity Matches 1538; Conserv TGATATTGACAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGAAAAGGCAAATGTTAA Conservative 0.8%; 0, Score 76.4; DB 3; Pred. No. 0.00013; Mismatches 2161; Indels 45; Gaps 5555 434 12;

5676 TGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAG ACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAAGCAAATCTCATTC TGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACACAAAATACTTCTGC TAATAAAATTTAGAAGAAGCCGAAGATATAAAGGAAAATATCTTATTAAGTAATATAGA **ACAAGAAAGTGTATCAGAAAATGTACAAGTCAGTGATGAACTTTTTAATGAATTATTAAA AGAACCAAAAGAAATATTATTGACAATTTATTAAATAATATTGGACAAAATTCAGAAAA** 614 5735 554 5675 5615 494

Ś

Ş

Ś

밁

ATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGGACAGG CGATATTTTTAATAGTTTAGTAAAAAGTGTTCAACAAGAACAACAACAACAATGTTGAAGA 5795 674

675 AAAAGTTGAAGAAAGTGTAGAAGAAAATGACGAAGAAAGTGTAGAAGAAAATGTAGAAGA TTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAAT

5855

734

S

S 밁 Ś 밁

멼

AAATGTAGAAGAAATGACGACGAAAGTGTAGCCTCAAGTGTTGAAGAAAGTATAGCTTC CACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTC---TGATGCGGTAATTGCTAATTA 5912 794

TGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAATGA 5972

AATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAAC **AAGTĠTTGATĠAAAGTATÄĠATTĊAAĠTATTĠAĀGAĀAATGTAGCTCCAACTGTTGAAGA** 6032

밁 Ş 밁 S 맑

밁 AGATGATTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAA **AAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAAGTGTAGCTGAAAAATGTTGAAGA** 6092 914

7164 AAATGCAGGAATCGGAGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTGGAAC 7223	CGTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGGAAAAAATATTAAGCAAACAGCAGC	7044 TGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTC 7103	6984 GAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTC 7043	6924 CGATCATAGTACTTTACACTCTTCTACTGATGTAAAATGTAAAAGCTCTTAATAAAATTTC 6983		6804 AGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTGGAATTCTTGC 6863	6750 GAGAGCAAGAGTGAAAAATTCTAAAATTATGACTCGAAACAAGTTAGATGTAAT 6803	6690 GGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATCAAACAC 6749	6630 AGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGT 6689	6570 AAATCAATTTGCAGGAAAAGACGGAAGTAGATGTGGAAGAAGAGCAAAGATTTTGGTAAAAAA 6629	6510 TTTTGGAGTCGGAGTCGCAGCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGT 6569	6450 TGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGGAATTCTAAGCAAGGAATTTCCTC 6509	6393 TGATACCAATATTATAAAAGAAATACCAAGACAAGAGTTGGAAAAACTACAATGTC 6449 	6333 TTCAATCOGAGTAGTAGGTCTGTTGGTGTGTGGTGGAAATGTAGGAGTAGGAGCTTCTTC 6392	6273 TGTAGAAAATTCTATATTAAATGCAAAAACATTATTCTGTAAAATCAGGAGATTACACGAA 6332	6213 ACAAGCCGGAGTOGCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGGTCT 6272	6153 TACCAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGG 6212	6093 TCTTAATATTAACGAAGACTTATCACAAAAAAGAAAATAAGTAATAAAAAAGGATTTGT 6152
S	유 성	유 성	B &	B &	B &	B &	B &	B 5		, B &) B &	}	, B &) B &	. B. &) B 5	D 5	B B
*	σ <	<i>6</i> ×	o <	0 4	o <	o «	<i>6</i> ×	σ <	σ «	σ <	σ <		σ <	<i>6</i> <	σ ≺	· • <	σ <	; o
8241 TGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTT 8300	8181 GGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGT 8240	8121 GGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATT 8180		TTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTC	7941 AAGAGAAATCAATGTCAAAGTGGAAAAAAAAAAAACAGAGTGACTGCTGAATCTCAAGGAGC 8000	7881 AATTGAGAAGAGTATTTTCAATGAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGG 7940 	7824 GGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAATTCAGAGGTTGA 7880	7764 TGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGC 7823 2640 AATGTTTTTAATTTGGAAGATGTATTTAAAAGTGAAAGTGTAATTACTGTAGAAGA 2699	TOTTCCTGCTATGAAAGATCAATTTTTAGGAATATTAAATTAAATGAGGCAGGAGGGTTGAAAGA	ACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTCTATGCAGAATTAAA	TATAGAAAATATGAAAGAAGGTTTATTAAATAAATTAGAAAATATTTCAAGTACTG	ATCAGGACAGTGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCAGGAACAATTCCGGAGTTACTGTTGAAAATTCCGGAGTTACTTTAGATTAAATTAAAATTCCGAATCAATC	AGAGGACAAGANTAATATCACTTCTACTGGTGGTTTGGGAAGTCCTTGCTTCCGC	AGGATTAAAGCCATTCTGAAGACTTCTGATATTATTGCAAAATGTAGATATTACAAC	ACCAGGTATTTCTACAGAGATACTTCTGTAAAAGCGGATAGAGAGATACTCAGGGAGA ACTAGGTATTTCAGGAGAGA ACTAGGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAG		AGC 1 KARANGA LAGARARAN I C. IGANGGARANGAK, KIGANG I I LAGARAK I I LAGARAK I I LAGARAK	> >—

S

5 B 5 B

8 8 8 8 8

```
3357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3237
                                                                                                                                                                                                                                                                                                                                                                                                                                    3837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3597
                                                                                                         4017
                                                                                                                                                         9129
                                                                                                                                                                                                                                                                                                                           3897
                                                                                                                                                                                                                                                                                                                                                                                 9009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCAGAAGATTCTAAAGAAATAATAGATGCAAAAGATGATACATTAGAAAAAGTTATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAAT----TGGTATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTAGATGCTTTGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAG-----CAGCCGTTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>AAAAGAAATCAAAGAACTTGAAAGTGAAATTTTAGAAGATTATAAAGAATTAAAAACTAT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGACAAGATCGAAAAAGTATCTGATTTAAAAGATCTTGAAGAAGATATATTAAAAAGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAGGAACATGATATAACGACGACGTTGGATGAAGTTGTAGAATTAAAAGATGTCGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAAGGAAAGTTTTAGAAGATGTAACAGCAAAACTTGGAGAAAGAGTTGAATCCTTAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ттадааасдаттосаададатаатасдаттствададтерасддадсдадсераассаардда ввзг
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATA--AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATAATAAGTGGTGATGCGCATATAAAAGGTTTGGAAGAAGATGATTTAGAAGAAGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>AGAAGTTGAAGAAGAAAAAATTAGAAGAAGTACACGAATTAAAAGAAGAGGTAGAACA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAAGAAGCTGAAGAAATAAAAGATCTTGAAGCAGATATATTAAAAGAAGTATCTTCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAAACAGATATTTTAGAAGAGAAAAAGAAATAGAAAAAGATCATTTTGAAAAATTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGTGCA
                                                   GATGGATATTAAAAATTTGGCAAA 9212
                                                                                                                                                         TCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGA
                                                                                                                                                                                                                                                                     TATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATAT
                                                                                                                                                                                                                                                                                                                                                                              AAATGTTGATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                       AATAACAAAAAGAAAGTAAGGTTTGATATTAAGGATAAGGAACCAAAAGATGAAATAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGATTTAAAAGGAAGTATATTAGACATGTTAAAGGGAGATATGGAATTAGGGGATATGGA
AAAGGTTAAAGAGAAAAAGAAAAA
                                                                                                         TATAGGTGAAGACAAAGATGAAGTTATAGATTTAATAGTCCAAAAAGAGAAAACGCATTGA
                                                                                                                                                                                                                     TATAGAAGAAGATAAAGTTGAAGATATAGATGAAGATATAGATGAAGATATAGATGAAGA
                                                                                                                                                                                                                                                                                                                              4100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3776
                                                                                                                                                                  9188
                                                                                                                                                                                                                        4016
                                                                                                              4076
```

멍 δ 밁 S

Ş 밁 ş В Ş 밁 Ś 밁 ર્

ð 밁 8 B

र् 밁

B δ 밁 음 성

당 S 밁 S 밁 5 밁 ঠ 밁

RESULT 23
ACL64817
ID ACL64
XX
AC ACL64
XX

standard;

DNA; 1039

먥

S

ACL64817; ACL64817

```
Ś
                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                      Ş
                        밁
                                                    á
                                                                                                            S
                                                                                                                                              밁
                                                                                                                                                                         Ś
                                                                                                                                                                                                        문
                                                                                     吊
                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 403; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to a substantially purified nucleic acid molecule encoding a nitrite reductase of SEQ ID NO. 11928. Purther disclosed is a recombinant DNA construct for expression of a nitrite reductase gene in a plant cell, and a plant cell comprising the recombinant DNA construct. The nucleic acid is useful for determining gene expression, identifying mutations in a gene of interest, and for constructing mutations in a gene of interest. Sequences given in records for SEQ IDs 1-1849 represent a set of 1849 contig and singleton sequences comprising coding sequences, DNA replication elements, promoters and other regulatory elements from the genome of the bacterium Myxococcus xanthus. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from USPTO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New substantially purified Myxococcus xanthus nucleic acid molecule encoding a nitrite reductase, useful for determining gene expression, identifying mutations in a gene of interest, and for constructing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 02-JUN-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-DEC-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US6833447-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Myxococcus xanthus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Transgenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1039 BP; 819 A; 72 C; 17 G; 129 T; 0 U; 2 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mutations in a gene of interest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2005-028716/03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10-JUL-2000; 2000US-0217883P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-JUL-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      xanthus
                                                       444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MONSANTO TECHNOLOGY LLC
                                                                                                                                                                                                                                     TGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTTAACTTTGTCAATGGAAAAATTGA
                                                                                                                                                                                                                                                                                              CGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAAAATAATATAGCAAATCTATATTT
                                                                                                                                                                                                                                                                                                                                                         TTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAAATTCCATTGAATCCGAATGGAAG
                             TATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTGGAAGAAGCCAAACATGGTAAAGT
                                                                                      AAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTTATCAATGCTGGTTCTTTTCATTC
                                                                                                                                                <u>АДАДАДАТ САЛАДАДАДАДАДАЙ ТАДАДАДАДАДАДАД ТТАДДАТ САЛТСАТАДАДТАДА</u>
                                                                                                                                                                            SEQ ID NO 1280; 25pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        plant; DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA fragment, seq
                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001US-00902540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                     44.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       replication; gene regulation;
                                                                                                                                                                                                                                                                                                                                                                                                                      0.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Slater SC,
                                                                                                                                                                                                                                                                                                                                                                                       <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       id 1280.
                                                                                                                                                                                                                                                                                                                                                                                                      Score 76; DB 14
Pred. No. 0.0001
                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wiegand
                                                                                                                                                                                                                                                                                                                                                                                                                      DB 14; Length 1039;
                                                                                                                                                                                                                                                                                                                                                                                          507;
                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           expression;
                                                                                                                                                                                                                                                                                                                                                                                          4
                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             вb
                                                                                                                                                                                                                                                                                                     263
    56
                                                                                         406
                                                                                                                       443
                                                                                                                                                    346
                                                                                                                                                                                                               286
                                                                                                                                                                                                                                                                       226
                                                                                                                                                                                                                                                                                                                                  166
                                                                                                                                                                                                                                          323
```

```
AASSILT 24
AASSI 1998
ID AASSI
XX AASSI
XX AASSI
XX AASSI
CX Staph
XX AATILE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                  21-MAR-2000; 2000US-0191078P.
23-MAY-2000; 2000US-0206848P.
26-MAY-2000; 2000US-0207727P.
23-OCT-2000; 2000US-0242578P.
27-NOV-2000; 2000US-0253625P.
22-DEC-2000; 2000US-0259931P.
16-FEB-2001; 2001US-0269308P.
                           Haselbeck
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Antisense; ds;
antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAS51998
  Yamamoto
                                                                                                                                                                                                                                                                                                                     21-MAR-2001; 2001WO-US009180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13-FEB-2002
                                                                          (ELIT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    706
                                                                        ELITRA
  RI,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGATTTATAAAGAAAGAAGGGGAAAAAGAAACTTATAACACTCCTTTAAGTTTATCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAAAAAAAAAAAAAAAGAAATTAACAAAGGCTCTAATCAACACCCCCAATATAACAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATTAGTGATCGAATAAATTCTGGTCTGACCGGAGATTTAAAAGCTACCAAGACAAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AMANTACATRATTTAAAAAACAAAAAAAAAAACNCCGCATAAAATATAAAAATAAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGATTGAAAGATACTGCAATACTAAAGACAGGAATTACAGATTTTAAAAATTTAGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGCATCGGTTTATATGCCGCCGGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAAAAAAAAA 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTGAAGCAAAGA 1054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATTAGTGCGAAAGCTACAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGAAATACCAAAGCAAATATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGAGATATTATTCTTTCAGCTCACATAGATTCTCCTCAAAAAGC---TATGGGAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTGGAAGCTTCCGTAAGAGTAAATAAAGGAAAAGTCATAGGAAAGAATGTTGACATTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
Ohlsen
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        prokaryotic cellular proliferation gene; antibiotic; drug design.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aureus DNA for cellular proliferation protein #415.
                                                                        PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aureus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA;
                        ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7104
                        Zyskind JW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВP
                           Wall
                        Ö
                        Trawick JD,
                        Carr
                        ଧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        526
                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                         맑
                                                                                                                                      Ś
                                                                                                                                                                                        문
                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    development. The antisense nucleic acids can also be used to identify proteins used in proliferation, to express these proteins, and to obtain antibodies capable of binding to the expressed proteins. The proteins can be used to screen compounds in rational drug discovery programmes. The antisense nucleic acid sequence is also useful to screen for homologus nucleic acids which are required for cell proliferation in a wide variety of organisms. The present sequence encodes an essential prokaryotic cellular proliferation protein. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to antisense inhibitors of genes essential to prokaryotic cellular proliferation, their use in identifying the genes, their use in the discovery of novel antibiotics, the essential genes themselves and the encoded proteins. The prokaryotes used are Escherichia coli, Staphylococcus aureus, Salmonella typhi, Klebsiella pneumoniae, Pseudomonas aeruginosa and Enterococcus faecalis. The invention is also useful for the identification of potential new targets for antibiotic useful for the identification of potential new targets for antibiotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 7104 BP; 3045 A; 1258 C; 1249 G; 1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New polynucleotides for the identification and development antibiotics, comprise sequences of antisense nucleic acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2001-611495/70.
P-PSDB; AAU34139.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                              7688
                                                                                                                                                                                                                                                                                         3059
                                                                                                                                                                                                                                                                                                                                                                                      3002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7208 TAAATAATTTTGGAACAGCTGTAGAAGATAGAAAAAATTCTGAAGGAAAAAGGAACAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27; SEQ ID NO 4580; 511pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATATAATACACGTAAACAAGAAATTCAAAATAGCAATGCTTCAACTACAGAAGAAAAAC
  AAACAGCAATTGATGCTAATAACGGTGCAACAACAGAAGAAAAAAAGCAGCTGCGAAACAAC
                                            TAGGAAAAAATATTGATGTTA---TTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAA 7804
                                                                                                                                                                                             CAAATACTGATGTAGATAATGCAAAAACTACTAATGAAGCTACAATCGCAGCCATTACAC
                                                                                                                                                                                                                                                                                         CAAAAGATAAAGTTGATCAAGCAGTAGTTACTGCAAACGCTGATATAGATAATGCTGCAG
                                                                                                                                                                                                                                                                                                                                                                                        AACGTAAAACT---GCAATTGAAGCAATGAATGATTCGACTACTGAAGAACAACAAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGGTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TACAAGCGGCAACAACTAAGAAATCGGATGCTAAAGCGGAAATCGCTCAAAAAGCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTAGATATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CABATACABACAGTGATGTAACAACAGCTAAAGACAATGGTATTGCTGCAATTAATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAAGCGGATAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAATGCAATTCAAACACAAGCAAAAGTTAAACCTGCAGCTGATACGGAAGTAGAAAACG
                                                                                              CTGATGCAAATGTTAAACCAACAGCGAAACAAGCAATTGCTGATAAAGTACAAGCGCAAG
                                                                                                                                         CCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTAT
                                                                                                                                                                                                                                     CAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTG
                                                                                                                                                                                                                                                                                                                                      TTACTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGCTGCATATACAGAATTAGATACTAAAAAGCAAGAAGCAAGAACAAATCTTGATGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 74.8; DB 4;
Pred. No. 0.00031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches 1367;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
```

3298

3236

3178

Ś

유

```
3479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3896
4310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4016
                                                                                                                                                                                                                                                                                                                                                                                                     8642 AAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATAATACAACTGGTGCTACAACTGAAGAAAAAATGCAGCAAAAGATTTAGTTTTAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAATGGAGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAGATACAGCGAAAGATGCAGGTAAAAATTCGATTCAAAGTACACAACCAGCAACAGCGG 3775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTAAAACTATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGCTCAAACGCAAGACATTACTGCTGAAGAAATTGCAGCGGCAAATGCGAAT---GTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAACTAAAGATAATGCGAAACAAGCAATTGCTACGAAAGCGAATGAACGTAAAACAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAATTCAGAGGTTGAAATTGAGAAGAAGTATTTTCAATGAAGAAAATAGAGTAACTAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGTTCAAACTGAAAAAAACAACAGCTGATACAGCAATTGATGGTGCACATACAAATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAA
                                                                                                                                                            TTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGCGAAAGATGAATTAGCAACAAAAGCAAGGGAACAAAAGCACTTATTGCACAAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGCGGTAGCCGGTGTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTANAGATCAAGCAGTTGCTGATGTTCAAGGTATTACTGCAGATACAACAATTAAAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTANATCAAATGCTAAAATGATGTTGATCAAGCTGTGACAACTCAAAATCAAGCAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGCAACAGCAGTTACAGACGCGAAAAATAATATTACAGCTGCAACTGATGATAATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCAAGCGAAAACAACTGGTGAAGCTAGTATTGATCAAGTAACACCAACAGTTAATAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATAATGCTGTGACACAAGCAAATAACAACATTGAAGCTGCTAATAGTCAAAATGATGTAG
AGACTACTAATGAAGAAAAAGGTAACGATATTGGACCAGTTAGAGCTGCATATGAAGAAG
                                                                                                              CAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAA
                                                                                                                                                                                                                                                                                                                                                 TAACGCAAGGTAATCAAAATATTGAAAATGCACAGTCAATCGATGATGTAAACACTGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGATGCGACTACTGAAGAAAAAGAACAAGCAAATCAAC-----AAGTAGATGCAGAAT
                                                    GAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGG
                                                                                                                                                                                                                               AAGATAATGCAATTCAAGCAATTGACCCAATTCAAGCATCAACAGATGTTAAAACGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8461
   4369
                                                                                                                                                                                                                               4249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8401
                                                                                                                    4309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4015
```

정 음 성 음

문

8 8 8 8 8 8 8

8

8 8 8 8 8 8

8 5 8 5

음 성 음

S

유 성

```
4607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4370
                                                                                                                                                                                                                                          4847
                                                                                                                                                                                                                                                                                  9356
                                                                                                                                                                                                                                                                                                                          4787
                                                                                                                                                                                                                                                                                                                                                                                                        4727
                                                                                                                                                                                                                                                                                                                                                                                                                                             9242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8882
                                                                               4967
                                                                                                                                                               4907
                                                                                                                                                                                                                                                                                                                                                              9296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTAG
                         TAAAATTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAG
                                                                                                                                                                                          AAATAAATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCA
                                                                                                                                                                                                                                                                                                                                                            TTCATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATC
                                                                                                                                                                                                                                                                                                                                                                                                   AAGCTGCATATAATGCTAAAGTAACCGAAGCGGATAACTCTAACGCATCGACTTCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACAAGAAATTAACGA ---TGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGTACAAAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAGCCAGCAGGTAAAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTTAAATAATAATAATGCAGCAACTACTACAGGTGATGTAACTACTGCTAAAGATACAG
                                                                               CAGATCAGAAGAAAAATAATTTCAGCTGACACTAATGCAACACAAGATGAAAAGCAAC
                                                                                                                                                                                                                                            ATCAAGCTACTTCTAAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTA
                                                                                                                                                                                                                                                                                                                        AAAATTCAAAAAATAATATTACTTTAGCATC-----AAGTAGTGAATCGAATGTGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTAAAATTAATGCAGTTAAAAACATTTAGTGAGTACAAAAAAGATGCTTTAGCTAAGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAATATTGACCAATCTTCAACAGATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTTAGATCAAGCTGCAGCTGATAAGAAAACACAAATAGAACAACACCAAATGCGTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTG
AAGCAATTAAGCAAGTTGACCAAAATGTTCAAACTGCATTAGAAAG
                                                                                                                     CGGATGCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAG
                                                                                                                                                               ACGATTACACAATTCCAACAGGTAAAAAAAGAATCAGCTACAACAGATTTATATGCCTATG
                                         9581
    5072
                                                                                                                                                                                                                                                                                                                              4846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9001
                                                                                                                                                                                                                                                                                                                                                                                                          4786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8941
                                                                                                                                                                                                           9475
                                                                                                                                                                                                                                                                                      9415
                                                                                                                                                                                                                                                                                                                                                                    9355
                                                                                                                                                                                                                                                                                                                                                                                                                                                    9295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9121
                                                                                                                                                                   4966
```

B 8 8 B

중 유

성 음 성 음

```
RESULT 25
AAS544654
XX AAS54
X
21-MAR-2000; 2000US-0191078P
23-MAY-2000; 2000US-0206848P
26-MAY-2000; 2000US-0207727P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Antisense; ds;
antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Staphylococcus aureus DNA for cellular proliferation protein #966.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAS54654 standard;
                                                                                                                                                                                                                        21-MAR-2001; 2001WO-US009180
                                                                                                                                                                                                                                                                                                                                             27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200170955-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   prokaryotic cellular proliferation gene; antibiotic; drug design.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ВP
```

```
밁
                                                                                                                                                                                                                  ઇ
                   ફ
                                                     밁
                                                                                S
                                                                                                                                                     ঠ
                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to antisense inhibitors of genes essential to CC prokaryotic cellular proliferation, their use in identifying the genes, CC their use in the discovery of novel antibiotics, the essential genes CC themselves and the encoded proteins. The prokaryotes used are Escherichia CC Pseudomonas aeruginosa and Enterococcus faecalis. The invention is also CC useful for the identification of potential new targets for antibiotic CC development. The antisense nucleic acids can also be used to identify CC proteins used in proliferation, to express these proteins, and to obtain CC antibodies capable of binding to the expressed proteins. And to obtain CC antibodies capable of binding to the expressed proteins. The proteins can CC be used to screen compounds in rational drug discovery programmes. The CC antisense nucleic acid sequence is also useful to screen for homologous nucleic acids which are required for cell proliferation in a wide variety CC of organisms. The present sequence encodes an essential prokaryotic CC cellular proliferation protein. Note: The sequence data for this patent CC did not form part of the printed specification, but was obtained in CC electronic format directly from WIPO at CC format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New polynucleotides antibiotics, compris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Haselbeck
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23-OCT 2000; 2000US-0242578P.
27-NOV-2000; 2000US-0253625P.
22-DEC-2000; 2000US-0257931P.
16-FEB-2001; 2001US-0269308P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (ELIT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2702
                   7628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-611495/70
DB; AAU36795.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ELITRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R R
CAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTG
                                                 CAAAAGATAAAGTTGATCAAGCAGTAGTTACTGCAAACGCTGATATAGATAATGCTGCAG
                                                                                                                                                                                                                                                                                         GAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                               CATATAATACACGTAAACAAGAAATTCAAAATAGCAATGCTTCAACTACAGAAGAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCAATGCAATTCAAACACAAGCAAAAGTTAAACCTGCAGCTGATACGGAAGTAGAAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAAATTAATTTTGGAACAGCTGTAGAAGATAGAAAAAATTCTGAAGGAAAAAGGAACAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7107
                                                                                  TTACTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTA
                                                                                                                                                     CAGGTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAAGAAATTCCCGGAG
                                                                                                                                                                                       TACAAGCGGCAACAACTAAGAAATCGGATGCTAAAGCGGAAATCGCTCAAAAAGCAAGTG
                                                                                                                                                                                                                       ATGTAGATATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTG
                                                                                                                                                                                                                                                         CAAATACAAACAGTGATGTAACAACAGCTAAAGACAATGGTATTGCTGCAATTAATCAAG
                                                                                                                                                                                                                                                                                                                           AAGCTGCATATACAGAATTAGATACTAAAAAGCAAGAAGCAAGAACAAATCTTGATGCTG
                                                                                                                                                                                                                                                                                                                                                        AAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0.8%;
nilarity 41.6%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        comprise
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ohlsen
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PHARM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ĕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8291; 511pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for the identification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; 1258 C; 1249
                                                                                                                     - GCAATTGAAGCAATGAATGATTCGACTACTGAAGAACAACAAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zyskind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 74.8; DB 4;
Pred. No. 0.00031;
0; Mismatches 1367;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        œ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ĕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        antisense
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wall
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         G; 1553 T; 0 U; 0 Other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      n and develonse nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    development
ucleic acids.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Trawick
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 7107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ď,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Carr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                 7687
                                                                                                                                                                                                                                                           2941
                                                                                                                                                                                                                                                                                                                             2881
                                                                                                                                                                                                                                                                                                                                                                                               2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7267
                                                   3118
                                                                                                                                                       7567
                                                                                                                                                                                       3001
                                                                                                                                                                                                                                                                                                                                                               7387
                                                                                                                     3058
                                                                                                                                                                                                                         7507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7
 멼
                     Ś
                                                              B
                                                                                          S
                                                                                                                                   밁
                                                                                                                                                            Ś
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
 4190
                                                                                                                                   4076
                                                                                                                                                                                                       4016
                                                                                                                                                                                                                                                                           3956
                                                                                                                                                                                                                                                                                                                                           3896
                                                                                                                                                                                                                                                                                                                                                                                                               3836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAGATACAGCGAAAGATGCAGGTAAAAATTCGATTCAAAGTACACAACCAGCAACAGCGG
 AAGATAATGCAATTCAAGCAATTGACCCAATTCAAGCATCAACAGATGTTAAAACGAATG
                                CAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAA
                                                                 TAACGCAAGGTAATCAAAATATTGAAAATGCACAGTCAATCGATGATGTAAACACTGCAA
                                                                                                                                                                                                                                       TAGCGGTAGCCGGTGTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                               GAŅĄTGGĄGGĄGGAATTGCCGGĄGCĄGGĄGTGĄĄTĄCTTCTĄCĄGCACAĄAGTAATĄCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTAAAACTATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAAAGATGCCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCCGGAAGAAGTATTTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGGAAAAATATTGATGTTA---TTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAATACTGATGTAGATAATGCAAAAACTACTAATGAAGCTACAATCGCAGCCATTACAC
                                                                                                   <u>AAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAG</u>
                                                                                                                                     CAGATGCGACTACTGAAGAAAAAGAACAAGCAAATCAAC-----AAGTAGATGCAGAAT
                                                                                                                                                                    TAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTA
                                                                                                                                                                                                         TTGCGAAAGATGAATTAGCAACAAAAGCAAGGGAACAAAAAGCACTTATTGCACAAACTG
                                                                                                                                                                                                                                                                           TTAAAGATCAAGCAGTTGCTGATGTTCAAGGTATTACTGCAGATACAACAATTAAAGATG
                                                                                                                                                                                                                                                                                                           TTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTT
                                                                                                                                                                                                                                                                                                                                             AATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATA
                                                                                                                                                                                                                                                                                                                                                                                                                 ATAATACAACTGGTGCTACAACTGAAGAAAAAAATGCAGCAAAAGATTTAGTTTTAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTAAATCAAATGCTAAAAATGATGTTGATCAAGCTGTGACAACTCAAAATCAAGCAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGCAACAGCAGTTACAGACGCGAAAAATAATATTACAGCTGCAACTGATGATAATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCAAGCGAAAACAACTGGTGAAGCTAGTATTGATCAAGTAACACCAACAGTTAATAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATAATGCTGTGACACAAGCAAATAACAACATTGAAGCTGCTAATAGTCAAAATGATGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGCTCAAACGCAAGACATTACTGCTGAAGAAATTGCAGCGGCAAATGCGAAT---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAACTAAAGATAATGCGAAACAAGCAATTGCTACGAAAGCGAATGAACGTAAAACAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTCTAAAGGAATTG----GAAGAGAAATCAATGTCAAAGTGGAAAAAAGAAAACAGAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAATTCAGAGGTTGAAATTGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGTTCAAACTGAAAAAACAACAGCTGATACAGCAATTGATGGTGCACATACAAATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAACAGCAATTGATGCTAATAACGGTGCAACAACAGAAGAAAAAAGCAGCTGCGAAACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGATGCAAATGTTAAACCAACAGCGAAACAAGCAATTGCTGATAAAGTACAAGCGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTAG
                                                                                                                                     4129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7981
                                                                   4189
                                                                                                                                                                                                         4075
                                                                                                                                                                                                                                                                           4015
                                                                                                                                                                                                                                                                                                             8521
                                                                                                                                                                                                                                                                                                                                             3955
                                                                                                                                                                                                                                                                                                                                                                                                                 3895
                                                                                                                                                                                                                                                                                                                                                                                                                                                 8401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3298
```

- -

```
В
RESULT 26
AAV74374
ID AAV74
XX
AC AAV74
XX
DT 16-M2
DT 16-M2
CX
COmp.
KW Comp.
KW Celli
KW skin
KW skin
KW toxi
                                            Computer readable medium; vaccine; S.aureus infection; immunodetection; cellulitis; eyelid infection; food poisoning; osteomyelitis; therapy; skin infection; surgical wound infection; scalded skin syndrome;
                                                                                                                                                                                                                                                                           AAV74374
                                                                                                                                    Staphylococcus aureus contig SEQ ID
                                                                                                                                                                                   16-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGTACAAAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAGCCAGCAGGTAAAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGACTACTAATGAAGAAAAAGGTAACGATATTGGACCAGTTAGAGCTGCATATGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                  ТАААЛТТЛАПАЛТСССАТСССАСАЛТТЛАААЛТААТСТСССААС 9581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ANATTGCAGNAGCGAÑACAÑANACTTGCTGAÑATTGAÑACAÑACGGCGGATCAÑAATGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAATTCAAAAAATAATATTACTTTAGCATC-----AAGTAGTGAATCGAATGTGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CANATATTGACCAATCTTCAACAGATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACAAGAAATTAACGA---TGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTTAGATCAAGCTGCAGCTGATAAGAAAACACAAATAGAACAACACCAAATGCGTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTTAAATAATATTAATGCAGCAACTACTACAGGTGATGTAACTACTGCTAAAGATACAG
                                                                                                                                                                                                                                                                           standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGATCAGAAGAAAATAATATTTCAGCTGACACTAATGCAACACAAGATGAAAAGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGGATGCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACGATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACAACAGATTTATATGCCTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTATATGCCGGATATGATAAAAATTATAATATAAGACAAAGACAAATTCTAAGGCTATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCAAGCTACTTCTAAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAATAAATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGCTGCATATAATGCTAAAGTAACCGAÁGCGGATAACTCTAACGCATCGACTTCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTAAAATTAATGCAGTTAAAAACATTTAGTGAGTACAAAAAAGATGCTTTAGCTAAGATTG 4726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCA
                                                                                                                                                                                                                                                                                                                                                                                          AAGCAATTAAGCAAGTTGACCAAAATGTTCAAACTGCATTAGAAAG
                          syndrome;
                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                           DNA;
                            ದ್ದ
                                                                                                                                                                                                                                                                           8155
                                                                                                                                                                                                                                                                             ВÞ
                                                                                                                                                                                                                                                                                                                                                                                          5072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4966
```

F Ś

á

밁 8

δ

Query Match
Best Local Similarity
Matches 972; Conserv

Conservative

Pred. No. 0.0 0; Mismatche

0.00055

DB 2; 1876 T;

Length 8155; 0 U; 248

Mismatches 1404;

Indels

42;

Gaps

<u>ن</u>

Sequence 8155

BP;

3300 A; 1279 0.8%;

C; 1452

ဂ္

Other;

Ş 밁 Ş 밁 S 밁 Ş 밁

片

Ş

밁 ð 밁 S 밁 S 밁 δ 밁 S

```
This sequence represents one of 5191 Staphylococcus aureus DNA sequences CC of the invention. The DNA sequences are recorded on a computer readable CC medium, preferably selected from a floppy or hard disk, random access CC memory (RAM), read-only memory (ROM) or CD-ROM. Homology searches using CC that protein-encoding or regulatory regions of commercial, therapeutic or CC industrial importance can be obtained. Specifically, sequences which are CC likely to encode antigens have been identified and these polypeptides can be used in a vaccine composition against S.aureus infection. The CC polypeptides can also be used in a kit for the immunodetection of CC saureus in a sample. S.aureus is implicated in numerous human diseases, including cellulitis, eyelid infections, food poisoning, osteomyelitis, CC skin and surgical wound infections, scalded skin syndrome, toxic shock Syndrome, etc. Organisms transformed with the DNA sequences can be used CC for recombinant production of the polypeptides. The new DNA sequences can be used composition of the polypeptides or probes for isolating cellulities of any of the S.aureus DNA sequences contained on the computer or readable medium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Staphylococcus
                                                                                                                                                                                                                                                                                                                               Claim 1; Page 482-487; 3271pp;
                                                                                                                                                                                                                                                                                                                                                                                Polynucleotide(s) and proteins
stored on computer readable med
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          05-JAN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07-JAN-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-JUL-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EP786519-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (HUMA-) HUMAN
                                                                                                                                                                                                                                                                                                                                                                  .aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                             β
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Choi GH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96US-0009861P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           97EP-00100117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "these bases represent a line of missing the sequence listing in the specification. They included to maintain the nucleotide numbering githe specification for this DNA sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note = "these bases represent a line of missing the sequence listing in the specification. They included to maintain the nucleotide numbering githe specification for this DNA sequence" 6721. .6780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note "these bases represent a line of missing text
the sequence listing in the specification. They are
included to maintain the nucleotide numbering given i
the specification for this DNA sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4921. .4980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3121.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "these bases represent a line of missing text
the sequence listing in the specification. They are
included to maintain the nucleotide numbering given i
the specification for this DNA sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Barash
                                                                                                                                                                                                                                                                                                                                                                                eins derived
e medium and
                                                                                                                                                                                                                                                                                                                                                                                                                                                               SC,
                                                                                                                                                                                                                                                                                                                                 English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dillon
                                                                                                                                                                                                                                                                                                                                                                                from
used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pd,
                                                                                                                                                                                                                                                                                                                                                                                Staphylococcus
in the producti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fannon
                                                                                                                                                                                                                                                                                                                                                                                production
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₹
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rosen
                                                                                                                                                                                                                                                                                                                                                                                                  aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 given
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              given
                                                                                                                                                                                                                                                                                                                                                                                    ę,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   text
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               text
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ÇA,
                                                                                                                                                                                                                                                                                                                                                                                    anti-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ä
```

4802 ATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGAACG 4861	TTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCAA 4	0*80 AICHAANIAITUAAHAIGCACHGICAAICGAIGAIGAIGAAAAGAIAAAIGAIAAIGCAA 6544 4682 CGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGCTTCTGGAC 4741	CGACTACTGAAGAAAAGAACAAGCAAGTAACAAGTAGACGCACAATTAACACAAGTA ATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGAGGATAAAATTCATG	AGATTGARTTAGCAACAAAAGCAAAAAAGCGCTTATTGCACAAACTGCAGATG CGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAAA	AGGAACAACTAGAAAAAGCAAAGAAAAAAAGAAGGAGCGGTCATTGTAAATGCTGCTTTAT	AAGATAAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATACGA	CCAPAGATGTCAPAGGAAGTTCTGATCTAGCAPAAGAATATCAGGCTTTACTAPATGGAA	ACGTGGAAGCTAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCATTG		CAAAAGCTCTTTTAGCAACCACTCAAGTGACTGCTGCAGTGACGACGGGAGGGA	ACAACAAAGTAAATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGACG			3962 TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAAATCTGAAAGCC 4021	3902 AAGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG 3961	3842 AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGGCAGGTTTGGAAGCAGTTA 3901	3782 TTCAAAGTAAAACAAGTGCTTTTGGTTAAAAATAGTGATATTTCGAAATGCCAATAAATTTA 3841
ON SP21 CAGTGTCTGGAGCCGTGCAGCAATAGGAGCCTCAACCAGTTGAAATTACAG 5980 OY S921 CAGTGTCTGGAGCCCGTGCAGCAATAGGAGCCTCAACCAGTTGAAATTACAG 5980	5801 7670 5861	Qy 5741 TTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGGAGCTGGAGTGACAGGTTCTG 5800	QY 5702 TACGAAATGCTTTGGTAAAAAG	Qy 5642 TAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCCAAAATG 5701	Qy 5582 TGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAG 5641	QY 5522 AAAATAATGGAAATAAGGAAAAGGCAAAATGTTTAATGTTCTAGCTGAAAATACGAGTCAAG 5581	Oy 5462 TGAATAAGACAGTITCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAG 5521	Qy 5402 CAGTCGGAGTTGGAGGAGCAAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCT 5461	Qy 5342 ATCAAGATAGAAAATATCAATGTGACTGCAAAAGATTATACCTATGACCAATACTATAG 5401	Qy 5282 ATATTGGAAAACAATCAGTTATAGCTATTGTAAAAACAGTAAAATTACAACGGCGAATG 5341	Qy 5222 TTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAA 5281	QY 5162 AGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAGATCAAAAAAACAATAAATA	QY 5102 GAGGAATGGTATCTGTCAATCGTGGTTCTGATGAAACGGAAGCTTTAGTTAG	Db 6893 AACAAGAAATTAATGATGCAAAACAAGAAGTTGATTAAATCAAGCGGAAAACAA 6952	4982 GAACGAAGGIRAAICCITIINGITGGAAGAARACACAAAGICAAIGIRCAAGGITIIGAAIG 6833 AATTAGATCAAGCTGCAGCTGATAAGAAAACACAAATTAGAACACAAATGCATCAC	6773 NNNNNNNNAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAACCAGCAGGTAAAAAAG	6713

 5
 8
 8
 9
 8
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9

Ş 밁 S 밁

ঠ 밁 ð 밁

```
ACA19708
ID ACA19708
ACA19708
ACA19708
ACA 1970
ACA19708
ACA 1970
ACA19708

the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are: (1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation; (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway required for proliferation, or that inhibits cellular proliferation; (8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21-MAR-2001; 2001US-00815242.

06-SEP-2001; 2001US-00948993.

25-OCT-2001; 2001US-0342923P.

08-FEB-2002; 2002US-00072851.

06-MAR-2002; 2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACA19708 standard; DNA; 7446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New antisense nucleic acids, useful for identifying proteins or a for homologous nucleic acids required for cellular proliferation isolate candidate molecules for rational drug discovery programs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Antisense; ds;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-MAR-2002; 2002WO-US009107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 14; SEQ ID NO 7578; 1766pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7910
                                                                                                                                                                                                                                                                                                                                                                                                            invention relates to an isolated nucleic acid comprising any one of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   design; gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2003-029926/02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ELITRA PHARM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABU15838.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCAGATGCAGATGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTTCAGCTACTCATACTT 6178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGTAAATGTCAACGCTGATGCTACAACTGAAGAAAAAGAAGCGTTTACGAATGCTTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAGGATTTGTTACCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTACTGTCAAAAATAGTGCGCTTGAACAACTTAAAGCACAACGTATTAATCCTGAAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGACATTTTATCAAAAGCAACTGAAGATATTTCTGATCAAACTACAAATGCAGAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zamudio C,
Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAAAATGCTTTGGAAGCAATCAGAGAAGTGGTTAACAAGCAAATAGGAATAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          essential
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     prokaryotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Malone
Carr (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         essential
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ទី័្ឌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #1365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Haselbeck R, Yamamoto R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene; cell proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ohlsen
Forsyth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>ş</u> ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zyskind
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 or screening
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6160
```

```
cc identifying a gene required for cellular proliferation or the biological cc pathway in which a proliferation-required gene or its gene product lies cor a gene on which the test compound that inhibits proliferation of an cc organism acts; (9) manufacturing an antibicti; (10) profiling a cc compound's activity; (11) a culture comprising strains in which the gene croduct is overexpressed or underexpressed; (12) determining the extent cc which each of the strains is present in a culture or collection of c strains; or (13) identifying the target of a compound that inhibits the proliferation of an organism. The antisense nucleic acids are useful for contifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational cc required for proliferation in cells other than S. aureus, S. typhimurium, K. pneumoniae or P. aeruginosa. The present sequence is one of the target prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in
                                                                                       prokaryotic essential genes. Note: The sequence not form part of the printed specification, but electronic format directly from WIPO at
                                                          ftp.wipo.int/pub/published_pct_sequences
```

Best Local Si Matches 804; Query Match Local Similarity 7446 Conservative BP; 3198 A; 1312 C; 1311 G; 0.7%; 0 Score 72.4; DB 8; Pred. No. 0.00092; 0; Mismatches 1091; 1625 T; 0 U; 0 Other; Length Indels 27; Gaps 5

á

3608 4319 4079 4028 4202 3968 4142 4082 3848 4022 3962 3728 TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA 3841 ACAACAAAGTAAATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGACG далалатобатоттолтогосттатславсобасасссалотвасловавсттта TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCC AGATTCAAGCTACACCAGATGCAACAGATGAAGAAAAAACAAGCAGCTGATGCAGAAGCAA TTAATAAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG GAAAAGATAAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATA TTGCCAAAGATGTCAAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTACTAAATG **ATACAACTGGCGCTACAACTGAAGAGAAAAATGCAGCAAAAGATTTAGTTTTAAAAGCTA ATGACGTGGAAGCTAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCA AATCGAATGCGAAAAATGAAGTTGATCAAGCTGTGACAACTCAAAATCAAGCAATTGATA** GTTCTGGAGCGGGATTAGGAAATTATCAAGGGGCTGTTTCTGTCAATAAG----ATTGACA **AAGACGCTGGAAAGAATTCAATTCAAAGCACACCAGCAACAGCAG** TTACAGACGCGAAAAATAATATTACAGCTGCAACTGATGATAATGGTGTAGATACAGCGA **ATGATCAGAACGCTACAAATGAAGAAAAAGAAGCAGCTATTCAACAATTAGCAACAGCAG** ATTTACAAGCTGGAAAGTCAAATGGAACTGTAGGGGCTACTGTGACTGTTGCCAAATTAA ATGAAGCGAAAGCTAATGCAGAAGCAGCAATTAATGCGGTAACACCAAAAGTTGTTAAGA **ATACTGAAAATGGTAAAGCAAATCAAGCCATTTCAGCAGCAACTACTAACGCACAAGTTG AAGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTA** ----TTA 4021 3901 4498 4438 4198 4378 4138 4318 4078 4261 4027 4201 3967 4141 3907 4081 3847 3961 3727 3667

Ş 밁 Ś 밁

밁 S 문 Ş 밁 5 망 Ś 밁

AAGATCAAGCAGTTGCTGATATTCAAGGTATTACTGCAGATACAACAATTAAAGATGTTG

4318

δ

S 망 á 밁 Ş 밁

문

ঠ 밁 S 밁 Ś

ঠ 밁

```
4619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAAACAGTAAAATTACAACGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAATGTCGATCAATCAACAAATGAATATGTTGATAATGCAGTTAAAGAAGGAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACAACAAGAAATTAATGATGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACTTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAATTCÁAGCAATTGÁCCCAATTCAÁGCÁTCÁACAGATGTTAAAACGAÁTGCAAGAGC-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTAATCAAAATATTGAAAATGCACAGTCAATCGATGATGTAAACACTGCAAAAGATAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGCGACTACTGAAGAAAAAGAACAAGCAAATCAACAAGTAGACGCACAATTAACACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATCGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTA
                                                                                                                                                                                                                                                                                                                               ACGATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACAACAGATTTATATGCTTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGATCAAGATAGAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGATGCATATAATGCTAAAGTAAACGAAGCGGATAACTCTAACGCATCGACTTCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAATTGCCGGAAATGCAAATGGAGGAAAAGCCGGCTGGAGTTGGAGCAACAGTTGCTCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTAAAATTAATGCAGTTAAAACATTTAGTGAGTACAAAAAAAGATGCTTTAGCTAAAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGGAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGCAGTACAAAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAACCAGCAGGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGCGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTA 4978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAATTGCTAACTGAAATGCAAAATAAAATAACTGAAATACTTAATAATAATGAGACT---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGAAAGATGAATTAGCAACAAAAGCAAACGAACAAAAAGCGCTTATTGCACAAACTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAAGGAACAACTAGAAAAAGCAAAGAAAAAAAGAAGGAGCGGTCATTGTAAATGCTGCTT
AAGTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTG
                                                                                                                               AAGAAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTC
                                                                                                                                                                                                CAGATCAGAAGAAAAATAATATTTCAGCTGACACTAATGCAACACAAGATGAAAAGCAAC
                                                                                                                                                                                                                                                              CCTTGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGG
                                                                                                                                                                                                                                                                                                                                                                                             TAGCAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTA 5458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGGTTTAAATAATAATGCAGCAACTACTACAGGTGATGTAACTACTGCTAAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGCAAATAATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTAATGCGGCTTCTG
                                                             AAGCAATTAAGCAAGTTGACCAAAATGTTCA---AACTGCATTAGAAAACATTAATAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCAAGCTACTTCTAAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTAATGAAGAAAAAGGTAACGATATTGGACCAGTTAGAGCAGCATATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4558
5638
                                                             5383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4678
```

Ş

유

र्

망

ફ 밁 S 밁 Ş 밁

밁

Ś 밁 Ş

S 밁

> 밁 Ś

TTAATAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG 367 TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA

27;

Gaps

ū

3841

Ş

밁 δ 밁

片

S

밁 Ś B ş 밁 ঠ 밁

```
ACFO5848
ID ACFO5848
ID ACFO5848
ID ACFO5848
AC ACFO5
AC 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
Query Match
Best Local S
Matches 804
                                                                                                                                                                                The present sequence is that of open reading frame ORF SA1964-ftmB (mrp) 2218122-225567 of methicillin resistant Staphylococcus aureus (MRSA) strain N315. The ORF was identified as an mmps/fmtB gene. The invention provides a method of detecting a strain of Staphylococcus aureus which has reduced susceptibility to vancomycin and/or teicoplanin by detecting the presence of one or more mutations in at least 2 open reading frames, including the present sequence. Polypeptides, probes, primers, kits and methods are provided for this detection. The methods are rapid, reproducible and sensitive, and allow for detection of strains that are fully or heterogeneously resistant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Detecting a strain of Staphylococcus aureus having reduced susceptibility to vancomycin and/or teicoplanin, comprises detecting the presence of mutation(s) leading to loss of function of at least one gene.
                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 7; Fig 3; 78pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Walsh TR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO2003062466-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Vancomycin;
antibiotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Methicillin resistant Staphylococcus aureus ORF SA1964-fmtB (mrp)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   04-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACF05848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-JAN-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-JAN-2003; 2003WO-GB000129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (UYBR-) UNIV BRISTOL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2003-636743/60.
DB; ABR62804.
                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGTGGATAATGGTGACGTTGATGATGCATTAACACAAGGTAAAGCAGCAATTGATACTA 5443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAA 5698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          standard; DNA; 7446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCAAGTAGATGCTACTGTTAAAACCTAAAGCGAACCAAGCTATTGAAGCTAAAGCAGAAG 5503
                                                                                                                          7446 BP; 3198 A; 1312 C; 1311 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AT 5700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Avison MB,
0.7%;
nilarity 41.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            resistance; gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            teicoplanin; MRSA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2002GB-00000865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     aureus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .7446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Howe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₽₽
Score 72.4; DB 10;
Pred. No. 0.00092;
0; Mismatches 1091;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            diagnosis;
                                                                                                                             1625 T; 0 U; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SA1964; mrps;
                                                             Length
                                                                                                                             Other;
```

```
3908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3902 ААGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3962 TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3842 AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTA 3901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4202
                                                                                                            4615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4439 GAAAAGATAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATA 4498
                                      4667
                                                                                                                                                                                                                                                                                                                                                                  4619 AAAATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTC
   4919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGACGTGGAAGCTAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCA 4378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAACAAAGTAAATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTTACAAGCTGGAAAGTCAAATGGAACTGTAGGGGCTACTGTGACTGTTGCCAAATTAA 4141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGATTCAAGCTACACCAGATGCAACAGATGAAGAAAAAACAAGCAGCTGATGCAGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                        TATCGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAAGGAACAACTAGAAAAAGCAAAGAAAAAAAGGAAGCGGTCATTGTAAATGCTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGAAAAAGCGTATCAAGATATCTTAAATGCACAAACAACTAATGATGTTACGCAAATTA 4258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGCCAAAGATGTCAAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTACTAAATG 4438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATACAACTGGCGCTACAACTGAAGAGAAAAATGCAGCAAAAAGATTTAGTTTTAAAAAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATCGAATGCGAAAAATGAAGTTGATCAAGCTGTGACAACTCAAAATCAAGCAATTGATA 4138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTCTGGAGCGGGATTAGGAAATTATCAAGGGGCTGTTTCTGTCAATAAG---ATTGACA 4318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGACGCTGGAAAGAATTCAATTCAAAGCACACAACCAGCAACAGCAG-----TTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTACAGACGCGAAAAATAATATTACAGCTGCAACTGATGATAATGGTGTAGATACAGCGA 4027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGATCAGAACGCTACAAATGAAGAAAAAAGAAGCAGCTATTCAACAATTAGCAACAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAAATGGATGTTGATGTCACTGCTTATCAAGCGGACACCCCAAGTGACAGGAGCTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGAAGCGAAAGCTAATGCAGAAGCAGCAATTAATGCGGTAACACCAAAAGTTGTTAAGA 3847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATACTGAAAATGGTAAAGCAAATCAAGCCATTTCAGCAGCAACTACTAACGCACAAGTTG
                                                                                                                                                                                                             GACTTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTAT 4798
                                                                                                                                                                                                                                                         CAATTCAAGCAATTGACCCAATTCAAGCATCAACAGATGTTAAAAACGAATGCAAGAGC-A 4557
                                                                                                                                                                                                                                                                                    ATGCGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTG
                                                                                                                                                                                                                                                                                                                                GTAATCAAAATATTGAAAATGCACAGTCAATCGATGATGTAAACACTGCAAAAGATAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGATCAAGCAGTTGCTGATATTCAAGGTATTACTGCAGATACAACAATTAAAGATGTTG
CGGCGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTA 4978
                                                                      ACGCAAATAATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTTCTA
                                                                                                                                            CAAATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGA 4858
                                                                                                                                                                                                                                                                                                                                                                                                        ATGĊĠĄĊŤĄĊŤĠĄĄĠĄĄĄĄĄĄĄĄĊĄĄĠĊĄĄĄTCĄĄCĄĄĠTĄGĄCĠĊĄCĄĄTTĄĄCĄCĄĄG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGAAAGATGAATTAGCAACAAAAGCAAACGAACAAAAAAGCGCTTATTGCACAAACTGCAG
                                                                                                          ----ACTAATGAAGAAAAAGGTAACGATATTGGACCAGTTAGAGCAGCATATGAAG
                                                                                                                                                                                 ĠĀĀTTĠĊTĀĀĊTĠĀĀĀTĠCĀĀĀĀTĀĀĀĀTĀĀTĀĀTĀĀTĀĀTĀĀTĀĀTĀĀGĀĠĀĊT---
                                    AAGGTTTAAATAATTAATGCAGCAACTACTACAGGTGATGTAACTACTGCTAAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3727
                                                                                                                                                                                                                                                                                                                                                                                                                                              4618
                                                                            4918
                                                                                                                                                                                                                                                                                               4738
                                                                                                                                                                                                                                                                                                                                   4498
                                                                                                                                                                                                                                                                                                                                                                        4678
                                                                                                                                                                                                                                                                                                                                                                                                        4438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4318
                                         4726
                                                                                                                                                                                      4614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 8
     RESULT 29
ADU74046
ID ADU74
XX ADU74
XX ADU74
XX IO-FE
XX Staph
XX ANTIE
XX ANTIE
XX ANTIE
XX Key
FT CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5459
```

음성 음성 음성 음

8 8 8 8

음 성 음 성

8 8 8 8 8 8 8

음 성 음 성 음 성

8

음 성 음

S

음 성 음 성

```
4847 CACAACAAGAATTAATGATGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5039 ATGATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAA 5098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4787 AAGAATTAGATCAAGCTGCAGCTGATAAGAAAACACAAATAGAACAAAACACCAAATGCAT 4846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4979 CAGGAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAGTCAATGTACAAGCTTTGA 5038
                                                                                                  5444 TTCAAGTAGATGCTACTGTTAAAACCTAAAGCGAACCAAGCTATTGAAGCTAAAGCAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAATGTCGATCAATCAACAAATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGTGGATAATGGTGACGTTGATGATGCATTAACACAAGGTAAAGCAGCAATTGATACTA
                                                                                                                                                                                                                                                                 AAGTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                САРАТАТТОВЕРАЛА СРАТСАВТТАТАВСТАТТОТАЛА В САВСТАЛА В ТЕСЕТОВ В 1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGATGCATATAATGCTAAAGTAAACGAAGCGGATAACTCTAACGCATCGACTTCAAGTG 5086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAATTGCCGGAAATGCAAATGGAGGAAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATA 5278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAA 5698
                                                                                                                                                                                                                                                                                                                                                                            pagaaaataatggaaataaggaaaaggcaaatgttaatgttctagctgaaaatacgagtc
                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGATCAGAAGAAAAATAATTTCAGCTGACACTAATGCAACACAAGATGAAAAGCAAC 5326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ссттваатаавасавттсттстсатвттватсаааствататтвасааастттавав
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACGATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACAACAGATTTATATGCTTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCAAGCTACTTCTAAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTA 5206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           АТСАТСААСАТАСАЛАААТАТСААТСТСАСТССААЛАССТТАТАСТАТСАССААТАСТА 5398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTAAAATTAATGCAGTTAAAACATTTAGTGAGTACAAAAAAGATGCTTTAGCTAAAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AT 5700
                                                                                                                                                                                                                                                                                                                            AAGCAATTAAGCAAGTTGACCAAAATGTTCA---AACTGCATTAGAAAACATTAATAATG
Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5026
                                                                                                                                                                                                                            5443
                                                                                                                                                                                                                                                                               5638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4966
```

```
밁
                                                                                 8
                                                                                                                         밁
                                                                                                                                                      5
                                                                                                                                                                                            밁
                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present sequence is the coding sequence for an Mrp-like protein of a C vancomycin-sensitive Staphylococcus aureus strain, denoted SA1964-fmtB CC (mrp) 2218122-225567. The encoded Mrp homologue protein may have a CC similar function to S. aureus Mrp/FmtB proteins. Expression of the mrp gene is down-regulated in S. aureus strains with a decreased susceptibility to vancomycin. The invention provides a method for detecting a strain of S. aureus which has reduced susceptibility to vancomycin and/or teicoplanin. The method involves detecting the level of expression of an fmtB/mrp gene or an mrp-homologue gene (including the present sequence) or a variant within the strain and relating that to the susceptibility or resistance of the strain to vancomycin and/or teicoplanin. Detection of expression is performed using an immunological method to detect the gene product or a molecular method such as RT-FCR to detect RNA constructs. The method is rapid, reproducible and sensitive and allows, for example, discrimination of vancomycin intermediate S. aureus (VISA) and heterogeneous vancomycin intermediate S. aureus (NVISA)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 804; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to vancom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 7446 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09-MAY-2003; 2003GB-00010794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             07-MAY-2004;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO2004099444-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Detecting a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-NOV-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (UYBR-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tecting a strain of Staphylococcus aureus with reduced susceptibility vancomycin or telcoplanin by relating the detected expression level of the perfect of homolog within the strain to susceptibility to vancomycin on
                                                                                                                                                                                                                                                                                                                                                                                                                                          3782
                   4142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2004-821685/81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ħ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          UNIV BRISTOL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OES
ACAACAAAGTAAATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGACG
                                                                                                                                                                                            ATGAAGCGAAAGCTAATGCAGAAGCAGCAATTAATGCGGTAACACCAAAAGTTGTTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA
                                                                                                                                                         AAAAAATGGATGTTGATGTCACTGCTTATCAAGCGGACACCCAAGTGACAGGAGCTTTAA
                                                                                                                                                                                                                                                                                                                                   AGATTCAAGCTACACCAGATGCAACAGATGAAGAAAAACAAGCAGCTGATGCAGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                      AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                      TTAATAAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG
                                                    ATGATCAGAACGCTACAAATGAAGAAAAAGAAGCAGCTATTCAACAATTAGCAACAGCAG
                                                                                    ATTTACAAGCTGGAAAGTCAAATGGAACTGTAGGGGCTACTGTGACTGTTGCCAAATTAA
                                                                                                                         TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCC
                                                                                                                                                                                                                                                              ATACTGAMAATGGTAÄÄĞCÄÄÄTCAAGCCATTTCAGCAGCAACTACTAACGCACAAGTTG
                                                                                                                                                                                                                                                                                                 AAGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Avison MB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2004WO-GB001985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ID NO 17; 102pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3198 A; 1312 C; 1311 G; 1625 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Howe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Mrp homologue"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ŗ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 72.4; DB 13;
Pred. No. 0.00092;
0; Mismatches 1091;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wootton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0 U; 0 Other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             orof
                   4201
                                                                                                                                                                                                                                                                                                                                   3727
                                                                                                                                                                                                                                                                                                                                                                    3901
                                                                                                                                                                                                                                                                                                                                                                                                      3667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
 밁
                       S
                                                                 밁
                                                                                               ş
                                                                                                                                       밁
                                                                                                                                                                5
                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                몽
                                  5219
                                                                    4967
                                                                                                                                         4907
                                                                                                                                                                         5099
                                                                                                                                                                                                            4847
                                                                                                                                                                                                                                              5039
                                                                                                                                                                                                                                                                                 4787
                                                                                                                                                                                                                                                                                                                 4979
                                                                                                                                                                                                                                                                                                                                                   4727
                                                                                                                                                                                                                                                                                                                                                                                    4919
                                                                                                                                                                                                                                                                                                                                                                                                                      4667
                                                                                                                                                                                                                                                                                                                                                                                                                                                       4859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGACGCTGGAAAGAATTCAATTCAAAGCACACAACCAGCAACAGCAGCAG-----TTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTACAGACGCGAAAAATAATATTACAGCTGCAACTGATGATAATGGTGTAGATACAGCGA
                            CAATTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATA 5278
                                                                    CTAAAATTAATGCAGTTAAAACATTTAGTGAGTACAAAAAAGATGCTTTAGCTAAAATTG
                                                                                                                                         CAAATGTCGATCAATCAACAAATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAG
                                                                                                                                                                                                            CACAACAAGAAATTAATGATGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAA
                                                                                                                                                                                                                                                                                                                                                                                    CGGCGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CANATGACACGATTGCANAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGA 4858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAATTGCTAACTGAAATGCAAAATAAAATAACTGAAATACTTAATAATAATGAGACT---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACTTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAATTCAAGCAATTGACCCAATTCAAGCATCAACAGATGTTAAAAACGAATGCAAGAGC-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTAATCAAAATATTGAAAATGCACAGTCAATCGATGATGTAAACACTGCAAAAGATAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCGACTACTGAAGAAAAAGAACAAGCAAATCAACAAGTAGACGCACAATTAACACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATCGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGAAGGAACAACTAGAAAAAGCAAAGAAAAAAGAAGGAGCGGTCATTGTAAATGCTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAAAGATAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATA 4498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGAAÄÄÄGCGTATCÄÄGATÄTCTTAAÄTGCÄCAÄÄCÄÄCTÄÄTGÄTGTTACGCÄÄATTÄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGCCAAAGATGTCAAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTACTAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATCGAATGCGAAAAATGAAGTTGATCAAGCTGTGACAACTCAAAATCAAGCAATTGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTCTGGAGCGGGATTAGGAAATTATCAAGGGGCTGTTTCTGTCAATAAG---ATTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGATGCATATAATGCTAAAGTAAACGAAGCGGATAACTCTAACGCATCGACTTCAAGTG
                                                                                                   ATGATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAA
                                                                                                                                                                                                                                                                                 <u>AÄGAÄTTAGÄTCAÄGCTGCAGCTGATAAGÄÄAÄCACAÄÄTÄGAACÄAAACÄCCAAATGCAT</u>
                                                                                                                                                                                                                                                                                                                 CAGGAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGA
                                                                                                                                                                                                                                                                                                                                                   CAGCAGTACAAAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAACCAGCAGGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                        <u>AAGGTTTAAATAATTAATGCAGCAACTACTACAGGTGATGTAACTACTGCTAAAGATA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGCAAATAATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTTCTA 4918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGANAGATGANTTAGCANCANAAGCNAACGANCANAAGCGCTTATTGCACANACTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGATCAAGCAGTTGCTGATATTCAAGGTATTACTGCAGATACAACAATTAAAGATGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATACAACTGGCGCTACAACTGAAGAGAAAAATGCAGCAAAAGATTTAGTTTTAAAAAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGACGTGGAAGCTAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCA 4378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTAATGAAGAAAAAGGTAACGATATTGGACCAGTTAGAGCAGCATATGAAG
                                                                      5026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4078
   5086
                                                                                                                                         4966
                                                                                                                                                                                                            4906
                                                                                                                                                                                                                                              5098
                                                                                                                                                                                                                                                                                 4846
                                                                                                                                                                                                                                                                                                                   5038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4138
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                (HOFF/) HOFFMAN S.
(CARU/) CARUCCI D.
(GARD/) GARDNER M.
(VENT/) VENTER J C.
                                                                                                                                                                                                                                                                                                                                                           07-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                      AAA70212 standard;
                                                                                                                                                                                                                                                                                                  antimalarial; malaria;
                                                                                                                                                                                                                                                                                                              Plasmodium falciparum;
                                                                                                                                                                                                                                                                                                                                     Plasmodium
                                          Proteins encoded by chromosome 2 of the human plasmodium falciparum, useful as antimalarial diagnosis of P.falciparum infection.
                                                                                                                                                                                                                                   11-MAY-2000
                                                                                                                                                                                                                                                                              Plasmodium falciparum
The present
                                                                                                                                                                                        05-NOV-1998;
                                                                                                                                                                                                             05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5699
                                                                                                                                                                                                                                                                                                                                                                                                                                                            5504
                                                                                       2000-365347/31
                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGTGGATAATGGTGACGTTGATGATGCATTAACACAAGGTAAAGCAGCAATTGATACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACGATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACAACAGATTTATATGCTTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCAGTCGGAGTTGGAGGAGCAAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATCAAGCTACTTCTAAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGATCAAGATAGAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGCAATTAAGCAAGTTGACCAAAATGTTCA---AACTGCATTAGAAAACATTAATAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGAAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGATCAGAAGAAAATAATATTTCAGCTGACACTAATGCAACACAAGATGAAAAGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTTGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGG
                                                                                                                                                                                                                                                                                                                                   falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5700
                                                                                                             Carucci
 invention describes proteins
                     Page 537;
                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                        98US-0107131P
                                                                                                                                                                                                             99WO-US026796
                                                                                                                                                                                                                                                                                                                                                                                                      DNA;
                                                                                                            à
                                                                                                                                                                                                                                                                                                                                     chromosome 2 related DNA sequence
                     577pp;
                                                                                                                                                                                                                                                                                                  chromosome 2; human malaria parasite;
protozoacide; infection; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                       1998
                                                                                                             Gardner
                                                                                                                                                                                                                                                                                                                                                                                                       ₽P
                     English
                                                                                                         3
                                                                                                            Venter
 and their fragments (I) encoded
                                                                                                             í,
                                                       malarial
vaccines
                                                       parasite,
and in the
                                                                                                                                                                                                                                                                                                                                      SEQ ID NO:345
                                                                                                                                                                                                                                                                                                               vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5338
```

```
CC infection. (I) and polyclonal antisera or a monoclonal antibody raised to immunogens comprising the sequences of (I) are useful in the detection of infection with P. falciparum. Furthermore, (I) (especially when they care rifins or secreted or membrane proteins) can aid the identification of drugs to treat or prevent P. falciparum. Sequencing of the continuous can be used to identify drug resistance in P. falciparum. Sequencing of the compandium chromosome 2 and the subsequent identification of proteins compandium chromosome 2 and the subsequent identification of proteins composed by it will help to expand our understanding of parasite biology, ca process hampered by the complexity of the parasitic lifecycle, and composed new targets for vaccine and drug development. Parasite resistance compandium chromosome continuous co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           by chromosome 2 of the human malarial parasite, Plasmodium falciparum. Also described are: (1) nucleotide sequences (II) encoding (I); and (2) vaccines against P. falciparum infection comprising (I) or (II). (I) and (II) are useful for the development of vaccines against P. falciparum
Sequence 1998 BP; 1127 A; 141 C; 338 G; 392 T;
     0 U;
     0 Other;
```

Query Match Best Local Sim Matches 434; 5130 Similarity TGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCAATGT Conservative 0.7%; 0, Score 68.8; DB 3 Pred. No. 0.0031; Mismatches 577; 9 Gaps 5189

ω ••

Length 1998;

1116 TCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGA

1176 **AAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGT**

1235

1296 acaaaatacttctgcacatataaaaaatagtactcaaaatgtacgaaatgctttggtaaa 5720

á 밁 Ś 밁 á 밁 δ 밁 á 밁 Ś 밁 Ś 밁 Ś 밁 á 밁 Ś

AGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATT 5840 AAAAAATGGAAATGAAAATGGAAATGAAAATGGAAGTGAAAATGGAAATGAAAATGGAAA 1475 AAGCAAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGG 1415 5780

밁 ઇ 망 Ś 밁 ક 밁 á 밁

밁 S

```
RESULT 31
ACN44156/c
ID ACN441
XX ACN441
XX ACN441
XX ACN441
XX House
XX Cytost
XX Mus mu
XX W02003
XX 12-SEP
XX W02003
XX 12-SEP
XX W07118
PF 28-FEB
XX W1-MAR
XX W07118
PF Compri
XX Claim
PS Claim
XX 
                                                                                                The present invention relates to novel DNA and protein sequences which are associated with carcinomas. The sequences are useful for: (i) for screening drug candidates; (ii) for screening of bloactive agent capable of binding to Carcinoma Associated Protein (CAP); (iii) for screening of a bloactive agent capable of modulating the activity of CAP; (iv) for evaluating the effect of a candidate carcinoma drug; (v) for diagnosing carcinoma; (vi) for inhibiting the activity of CAP; (vii) for treating carcinoma; (viii) for neutralizing the effect of CAP; (x) as a blochip; (x) for diagnosing carcinoma or a propensity to carcinoma; and (xi) for determining Carcinoma Associated (CA) gene copy number. In addition, the CA genes are useful as markers of carcinoma including lymphoma. The present sequence is one such CA coding sequence. Note: This patent is an equivalent to basic patent respective for which the carcinoma and the CAP are useful as markers of the carcinoma for which the carcinoma and the CAP are useful as markers of carcinoma including lymphoma. The present sequence is one such CA coding sequence. Note: This patent is an equivalent to basic patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Recombinant comprises a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Morris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-MAR-2002; 2002US-00087192.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-FEB-2003;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO2003073826-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cytostatic; carcinoma; lymphoma; cancer; murine; gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-NOV-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACN44156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACN44156 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-SEP-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (SAGR-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2003-328604/31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SAGRES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NO 463; Opp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAAAGAAGAAACAGATGATTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAAAACGAAAATGGAAACGAAAATGAAAACGAAAAAGAAAACGAAAAGATAAAAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAACAAAATAAATTTAATGAAACATTAAATGTATCAACCAATCATAAAAATCATTATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAAATGGAAATGAAAATGAAAATAAAAATGAAAGTGAAAATGAAAATGAAAACGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nucleic acid useful for nucleotide sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2003WO-US006235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISCOVERY
                                                                          for which no sequence data was published
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mCG15184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           treatment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         88.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           e
F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           carcinoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1655
```

Sequence

31124

BP;

6071

?

5415

ü 5616

ဝ 6491

13

0 ς,

7531 Other;

The invention relates to a novel method for identifying, isolating and producing hyperimmune serum-reactive antigens from a pathogen, tumour, allergen, a tissue or host prome to auto-immunity, where the antigens are used in a vaccine, comprises providing antibody preparation from a plasma

225;

252pp;

English

```
RESULT 32
ABT15076
ID ABT15
XX ABT15
XX ABT15
XX ABT15
XX ART15
XX ART1
XX ART
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 160;
                                                                                                                                                                                                    Identifying, isolating and producing hyperimmune serum-reactive antigens from a pathogen, for preparing vaccine or medicament for treating or preventing e.g. staphylococcal infections, comprises providing antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Antibacterial; virucide; fungicide; protozoacide; cytostatic; anti-HIV; hyperimmune; serum-reactive; antigen; pathogen; tumour; allergen; auto-immunity; vaccine; staphylococcal infection; antibody; cancer;
                                                                                                                                                                                                                                                                                                                WPI; 2003-075410/07
                                                                                                                                                                                                                                                                                                                                                                                                             Meinke A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-JAN-2001; 2001AT-00000130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-JAN-2002; 2002WO-EP000546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200259148-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             autoimmune disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pathogen specific antigen related staphylococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         06-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABT15076;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABT15076 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                Tempelmaier B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (CIST-) CISTEM BIOTECHNOLOGIES GMBH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18326 AAAAGACTTTGT 18315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7110 АGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAATATTAAGCAAACAGCAGCAAATGC
                                                                                                                                                                                                                                                                                                                                                                                             DB,
                                                                                                                                                                                                                                                                                                                                                                                  Nagy E,
Vytvytska
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAAAGCCATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGACGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGAATCGGAGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.7%;
51.3%;
                                                                                                                                                                                                                                                                                                                                                                                     Von Ahsen U, Klade
O, Etz H, Dryla A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 68.8; DB 1
Pred. No. 0.0071;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches 152;
                                                                                                                                                                                                                                                                                                                                                                                          Klade C, Henics T,
ryla A, Weichhart T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                             Zauner W
Hafner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ID No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31124;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                     . ¥
3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7169
```

```
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                     밁
                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CC pool of a type of animal, or individual sera with antibodies against the specific pathogen, tumour, allergen, tissue or host prone to autocci immunity. The hyperimmune serum-reactive antigens comprising any of the CC expequences of 53-2261 amino acids fully defined in the specification, or their hyperimmune fragments are useful for the manufacture of a CC pharmaceutical preparation, particularly a vaccine against staphylococcal infections or colonisation against S. aureus or S. epidermidis. The CC preparation of antibodies is useful for the manufacture of a medicament CC for treating or preventing staphylococcal infections or colonisation CC against S. aureus or S. epidermidis. The antibody preparations may also be used for diagnostic and imaging purposes. Other conditions that can be CC treated include cancer, autoimmune diseases or infections caused by viral CC eg. HIV, hepatitis A, B or C), fungal or protozoan pathogens. This colonidation of the method for identifying and producing pathogen specific antigens of the invention.
                                                                                                                            밁
                                                                                                                                                               Ś
                   ş
                                                      밁
                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Si
Matches 505;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 4911 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5445
                     5865
                                                                                                                                                                                                                                          5685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              153
                                                                                                                                                                                                                                                                                                                                                                                                                                 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TÄÄCÄCÄÄCTCÄAÄAGCAAGATGATÄGTTČÄGÄTGCÄÄGTÄÄÄGTAAAGGTAATGTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTAGTTAGTGATTCTGAGTTTGAAGGAGGAGTAAGTTCTTTCAATGTAGATGCAAAAGATCA
                                                                                                                                                                                                                                                                                                                                                                                            TGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATTACAACGGCGAATGATCAAGATAGAAAAATATCAATGTGACTGCAAAAGATTATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTATTGAACAATCTTCTGCAAATTCAAATGAATCTGATATTCCTGAACAAGTTGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACAGTTGCTCATACAAATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAAACAGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAACAATAAATACAATTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTAGTAGGAGCTACTTTAATTTTCGGTGTTGCAAATGATCAAGCAGAAGCCGCTGAGAA
GGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAGT 5924
                                                                                                                                                                                                                                          TGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAA
                                                                                                                                                                                                                                                                                                                                                       AACAACAGAAGAAGCGCCAAAAGCTGAAGAAACAGACAAAGCAACAGAAGA-----AGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCAACAGAAGAAAAGCAGATACAACTGAACAAGCAACAGAAGAAGAAGCGCCAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACTAAAGATACAACTGAACAAGCATCAACAGAAGAAAAAGCAAATACAACTGAACAAGC
                                                                                                                                                                 AACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGGACAGGTTCTGTAGC
                                                                                                                                                                                                     <u>AAGCAAAGCAGCAACAGAAGAAGCGCCAAAAGCTGAAGAAACAAGCAAAGCAGCAACAGA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAAGGAACAGACAAAGTAGAAACAGAAGAAGCGCCAAAAGCTGAAGAAACAGACAAAGC
                                                                                         AGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGAA
                                                                                                                                  <u>AGAAACAGACAAAGTAGAAACAGAAGAAGCGCCAAAAGCTGAAGAAACAAGCAAAGCAGC</u>
                                                          AACAGAAAAAGCACCAAAAGCTGAAGAAACAAACAAAGTAGAAACAGAAGAAGCGCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.7%;
nilarity 42.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; 938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 68.2; DB 8; Length of Pred. No. 0.0054; O; Mismatches 683; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>ე</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G; 886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 4911;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       u;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         152
                                                                                                                                                                                                                                                                                                                                                                                              5624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               212
                                                                                                                                                                                                         686
                                                                                                                                                                                                                                                                                 626
                                                                                                                                                                                                                                                                                                                                                                                                                                   506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      392
                                                            806
                                                                                                                                                                                                                                                                                                                                                           566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
```

```
RESULT 33
ACA47636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
Wang
Wall
                                                                                                                                                                                       21-MAR-2001; 2001US-00815242.

06-SEP-2001; 2001US-0094893.

25-OCT-2001; 2001US-0342923P.

08-FEB-2002; 2002US-00072851.

06-MAR-2002; 2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                               grug
                                                                                                                                                                                                                                                                                                                                        Staphylococcus haemolyticus
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACA47636;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACA47636
                                                                                                                                                                                                                                                                21-MAR-2002; 2002WO-US009107
                                                                                                                                                                                                                                                                                                                WO200277183-A2
                                                                                                                                                                                                                                                                                                                                                                          Antisense; ds; prokaryotic essential
                                                                                                                                                                                                                                                                                                                                                                                                  Prokaryotic essential gene
                                                                                                                                                                                                                                                                                                                                                                                                                           19-JUN-2003
                                          New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                           P-PSDB;
                                                                                                                                                                  (ELIT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                807
                                                                                             2003-029926/02.
DB; ABU43766.
                                                                                                                                                                                                                                                                                                                                                               design;
                                                                                                                                                                  ELITRA PHARM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCTGAAGAACAAACAAAGCAGCAACAGAAGAAACACCAGCAGTTGAAGACACAAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGTATTACCAAAAGÁTATTTCAÁACTTATCTAÁTGÁAGAÁATTÁAÁAÁAAATAGCTTTAÁG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAACAGATGATTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAAGAGCAATTCAAATGCTCAACCATCAGAAACTGAGAGAACTCAAGTTGTAGATACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCATAAAACTTATAAAGAAGAATTCCCTAATGAAGGCACGCTAACTGCATTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAAT 6338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGA-AAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAAGTACTTAAAGAAACAGCTAACAAAGAAAACGCACAACCAAGAGCAACATTCCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAAGGATTTGTTACCAATAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATATTAA 6104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCTAAAGATTTATATAAAAAATCTGAAGTTACAGAAGCAGAAAAAGCTGAAATTGAAAA
                                                                                                                               Zamudio C,
Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCACAAGACACAGTTACTAAAAAAAGGAACTGGTAACTTTACTGCGCATGGAGATATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTAAGCAGCAATGCTAGAACAACAAATGTTAACTATTCAGCAACAGCATTAAGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGT
                                                                                                                                                                                                                                                                                                                                                               gene.
                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA; 4997
                                                                                                                                Malone
Carr (
                                                                                                                             ဂ်
ရိ (
                                                                                                                                                                                                                                                                                                                                                                                                     #29293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₽₽
                                                                                                                               Haselbeck R, Yamamoto R,
                                                                                                                                                                                                                                                                                                                                                                             gene; cell proliferation;
                                                                                                                                Ohlsen
Forsyth
                                                                                                                                 ₽₽
                                                                                                                                 Zyskind
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1281
                                                                                                                                               Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1106
```

Claim 14; SEQ ID NO 35506; 1766pp; English

The invention relates to an

isolated nucleic acid comprising

any

one

e E

```
ş
                                                                                                                                     밁
                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CC the gene product or that has an activity against a biological pathway CC required for proliferation, or that inhibits cellular proliferation; (8) CC identifying a gene required for cellular proliferation or the biological cC pathway in which a proliferation required gene or its gene product lies cor a gene on which the test compound that inhibits proliferation of an CC organism acts; (9) manufacturing an antibiotic; (10) profiling a CC compound's activity; (11) a culture comprising strains in which the gene CC product is overexpressed or underexpressed; (12) determining the extent CC to which each of the strains is present in a culture or collection of CC strains; or (13) identifying the target of a compound that inhibits the CC proliferation of an organism. The antisense nucleic acids are useful for CC identifying proteins or screening for homologous nucleic acids required CC drug discovery programs, or for screening homologous nucleic acids crug discovery programs, or for screening homologous nucleic acids crug discovery programs, or for screening homologous nucleic acids crug discovery programs. The present sequence is one of the target CC prokaryotic essential genes. Note: The sequence is one of the target CC prokaryotic essential genes. Note: The sequence data for this patent did CC electronic format directly from WIPO at CC fth, who had a component of the printed specification, but was obtained in CC electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are: (1) a vector comprising a promoter perably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation; (7) identifying a compound that influences the activity of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                             GCTGGAGTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACT
                                                                                                                                                                                                                                                                                                                                                                                          GAGGAAGAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAGCAAGAAAAGCAATTGATGATGAAGTCGTTGCTAAGAAAGCAGCAATTGATACTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACTACCTTGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACAAAATAGCGGTACTTCGACTATTACTGGTATACAACCAG-AAGTTACTAAAAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTATAGCAGTCGGAGTTGGAGGAGCAAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTAACAGCTGCAAAACAAGCAATTACACAAGCAACAACAAATGATAAT--GTAGACCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGAATGATCAAGATAGAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATACGTCAGATGCAACACAAGAAGAAAAAGATGCAGCAATAGCGAAAGTTGATGCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CATACAAATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ANAGCAGCAGCAAGAAAAGCGATTGATGATGCAGCAACTGCTAAAAAAGAAGCGATAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATACAATTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCT
                               CAAGCAATAGATGATAGTGCAAATGCTAAAAAAGCAGCAATTGACAATAATAGTGATGCA
                                                                                                                                                                                                                                       AAAGCAAAAGCAGCGATTGATCAAGCTACTACAAACAACGATGTAGAGCAAGCCAAATCA
                                                                                                                                                                                                                                                                                       AGTCAAGTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGA
                                                                                                                                                                                                                                                                                                                                          GCCGATGCTACAGATGAAGAAAAACAGGCAGCTAAAGATAAAGTTGATGCTGAAGCTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2206 A; 790 C; 905 G; 1096 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0.7%;
41.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 68.2; DB 8;
Pred. No. 0.0054;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches 1318;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
U;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 4997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                          2325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5274
                                                                                                                                                                                                                                                                                                                                                                                                                                               2265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2088
                                                  밁
                                                                                                  Ś
                                                                                                                                                          밁
                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
S
                                                                                                                                                                                                                                                                                                                                                                  3346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2566
  6826 GGTACTGGAATCGGTTCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGGTT 6885
                                                     CAAGCAAAAACGAATGGAACTACAATAATTTCTTCAATAGAACCAGA------A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTAGGTTCTGTTGGTGGTGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATATT
                                                                                                                                                          GAAGAAGTAACAAAAGCTAAGTCAGCAATCGATAAAGCCAACACAAATAATGATGTTGAC 3525
                                                                                                                                                                                                             GGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGAAA 6765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTC 6525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATAAAAAGAAATACCAAGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGTTTCGGA 6465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGAATCAATAGAAAAATTAAAGCGAAGCAAGCGATTGATGATACTGTTACAGCCAAA 3165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCA 6228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGGTATTCAAGTAGATGCAGTTAAAAAAGCAAATGCTAAACAAGCAATTGATGATGCA 2925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GANAAAGACGCAGCAAAAGCTAAGGTAGATGCTGAAGTACAAAAAGCGAAAGATGCAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATTCAATTTCAGTAATTCAGCCTGATATTGTTAAAAAAGCAGCAGCAAGAAAAGCAATT
                                                                                                       AATTCTAAAATTATGACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAATCA 6825
                                                                                                                                                                                                                                                               ATAGATCAAGTTTCTGATGCTACACAAGAAGAGAAAGATGCAGCGAAAGCTAAAGTTGAC 3465
                                                                                                                                                                                                                                                                                                             AAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCT
                                                                                                                                                                                                                                                                                                                                                                  ATCAAAAAAGCTGAATCGAAACAAGCAATCGATGATGCTGCTACAGCTAAAAAAAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ĠĊTĠTŔĊŔĊĠŔŖŖĊŢĊĠŔĠŖŢŖŖŢĠŖŖŖŢŔŖĊŢĠĊŢŖŢŢŖŖĊŖŖŔĠĸŖĊŔĸĠĊŔ 3345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGA 6585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAGTAGATGAAGAAGCTACTAAAGCGAAACAACTTATAGATCAAGCTAGTACTAATGAT 3285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTA 6345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAAAAGCAAAAGTGGATGAAGAAGTAGCTAAAGCAAAACGAGCAATTGATTCATCGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAACTGTTAATAT---CAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAGCTAAGAAAATGAAATTGACCAACATCCAACAGCTACACAAGAAGAAAAAAGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACTTATCACAAAAAAGAAAATAAGTAATAAAAAAGGATTTGTTACCAATAGTTCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTCAAGCAAATTCAAATAATGATGTAGATCAAGTACAAAATTCTGAAACTGCTACAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGATGCAGCAACAGCTAAGAAACAAGAAATTGATCAACACCCAACAGCTACACAAGAA 2745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAATGAAATTACAGGATCTACAAAAG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACAGCGATTGATCAAGCAACAACGAATGATGGTGTAGACCAAACGAGAGACTTAGGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAATGTC 5874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAG 5814
                                                                                                                                                                                                                                                                                                                                                                                                                     AAGACGGAAGTAGATGTGGAAGAAGCAAAGATTTTGGTAAAAAAAGCTGAGATTACAGCA 6645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACGAATGACGCGGTAGATCAAGCGAAAGACTCTGGTGTAACTACTATTAATAATATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       actcaagggcaagtagataaagtggtagataaagtattcaaaaatcttaatattaacgaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----CATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTATATTACT
```

```
RESULT 34
AAN60472
ID AAN60
XX AAN60
AC AAN60
AC AAN60
DT 25-MJ
DT 24-AA
XX Seque
XX Mala1
XX Mala1
XX Plasm
KW Mala1
XX Plasm
XX Plasm
XX Plasm
XX WO860
PT exon
FT exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                25-MAR-2003
24-AUG-1991
 11-SEP-1984;
11-SEP-1984;
                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                     AAN60472
                                            11-SEP-1984;
                                                                      27-MAR-1986
                                                                                                                                                                                                                Plasmodium
                                                                                                                                                                                                                                           Malaria
                                                                                                  #08601802-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7066
                                                                                                                                                                                                                                           vaccine; antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAAATCAAGAAGCTACTAAAGAAGAAAAAAGACGCAGAAAGCAAAAGTAGATGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAGCAGAAGCAAAACAAGCAATTGATGATGCAGTGACTGCTAAAAAAAGCAGAAATTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGAAGAAGCAACAAAAGCAAAAGCAGCGATTGATCAAGCTTCTACTAATAATGGTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTACTGATGTAAATGTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAATTGATAATGAAAATGCTATACAAGAAGAAAAAGATGCTGCTAAAACAAAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTGTCAATAATATTGCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTATTAAAAAAGCTGAGGCGAAACAAGCCATCGATGTGGCAGTGTCAGCTAAGAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTTCTGATATTATTGGAAAAATGTAGATATTACAACAGAGGACAAGAATAATA 7480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAACAGACGGTGCTTCAGCTATAACAAAATTCAACCAGACGTTGTTAAAAAAGTCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAACAAAAGCTAAAAATAACATTGACCAATCTACAACGAATAATGATGTCGATCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAATCGGAGCCAATGTCTTGGTAAATAATTTTGGAACAGCTGTAGAAGATAGAAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACGGCAAAAGAGGAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGGAGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATCAAGCAAAAACATCAGGTGAAAACAACTTTCTTCAATCCAACCAGAAGTTGTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCT
                                                                                                                                                                                                                                                                     encoding the ring-infected Erythrocyte Surface Antigen
                                                                                                                                                                                                                                                                                                                                                                     standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGCAACTAAAGAAGAAAAAGATGCAGCTAAAGCGAAAGTAGATGAAGAAGCAACAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAAAACGCGCAATTGATGATGAAGTAATAGCTAAAAAGGCTGAAATTGATCAAAATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTTAGACGAAGTTAACAAAGAACAAGAT 7305
                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAAAACAATCTATTGATAATGCGACAACAAATGAAGCAGTAGATCAAGCTAAAA
                                                                                                                                                                                                             falciparum
                                                                                                                                                                                                                                                                                                 (revised)
(first entry)
 84AU-00007066.
84AU-00007067.
                                            84AU-00007066
                                                                                                                           /*tag= a
1199. .4225
/*tag= b
                                                                                                                                                                       801. .995
                                                                                                                                                                                   ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                     DNA;
                                                                                                                                                                                                                                                                                                                                                                      4590
                                                                                                                                                                                                                                         epitope;
                                                                                                                                                                                                                                                                                                                                                                      BP.
                                                                                                                                                                                                                                                                        (RESA).
                                                                                                                                                                                                                                                                                                                                                                                                                                             4228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3993
  RESULT 35
AAS46686/c
ID AAS466
XX
AC AAS466
XX
DT 18-DEC
XX
DT Tumour
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                        吊
                                                                                                                                                                                                                                                                                             5
                                                                                                                                                             밁
```

Tumour suppressor 18-DEC-2001 AAS46686; AAS46686

gene derived chemically modified sequence

(first

entry)

standard;

DNA;

7442

₽P

```
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The inventors claim a novel DNA molecule which comprises a nucleotide sequence corresp. to all or a portion of the base sequence coding RESA (AAM60472) or FIRA (AAM60473). RESA and FIRA have antigenicity suitable for providing protective immunity against Plasmodium falciparum malarial infections. (Updated on 25-MAR-2003 to correct PA field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA coding for Plasmodium falciparum antigens - expressing poly:peptide(s) having antigenicity of RESA or FIRA antigens falciparum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 4; Fig 1; 55pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1986-094065/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10-SEP-1985;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HALL-) HALL INST MEDICAL RES WALTER & ELIZA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3674
                                                                                                                                    4028
                                                                                                                                                                                                     3968
                                                                                                                                                                                                                                                                      3910
                                                                                                                                                                                                                                                                                                                                       3854
                                                                                                                                                                                                                                                                                                                                                                                                          3794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                                                                      805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                233;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAP60569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                       ATTAGTGATCGAATAAATTCTGGTCTGACCGGAGATTTAAAAGCTACCAAGACAAAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4590 BP; 1933 A; 437 C; 673 G; 1547 T;
                                 GAAGCAAA 1052
                                                                                                                                  ACTGTTGGAAGAGAATATAGAAGAATATGTAAAAGGAAATACCAAAGCAAATATTGAATCT
                                                                                                                                                                   TTTATAAAGAAAGAAGGGGAAAAAAGAAACTTATAACACTCCTTTAAGTTTATCAGATGTG
                                                                                                                                                                                                                                                                                                                                       GGAGATATTATTCTTTCAGCTCACATAGATTCTCCTCAAAAAGCTATGGGAAAAATTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATGTAGAACATGATGCTGAAGAAATGTAGAACATGATGCTGAAGAAAATGTAGAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGATTGAAAGATACTGCAATACTAAAGACAGGAATTACAGATTTTAAAAATTTAGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATGCTGAAGAAAATGTAGAACATGATGCTGAAGAAAATGTAGAACATGATGCTGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGCATCGGTTTATATGCGGCGGATATT
GAAGAGAA
                                                                 GAAGCTTCCGTAAGAGTAAATAAAGGAAAAGTCATAGGAAAGAATGTTGACATTACAGCT
                                                                                                                                                                                                                                   GATGCTGTATTGGAAGCAGATGGAAATATAAAAATTAGTGCGAAAGCTACAAATGGGAGA
                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              85AU-00047326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ×,
 4155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Coppe1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 67.6; DB 1;
Pred. No. 0.0069;
0; Mismatches 249;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Brown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ်ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Saint
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   249;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 4590;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cowman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          e
f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ש
                                                                                                                                                                                                                                                                                                                                                                            804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3733
                                                                                                      1044
                                                                                                                                       4087
                                                                                                                                                                                                        4027
                                                                                                                                                                                                                                                                          3967
                                                                                                                                                                                                                                                                                                           864
                                                                                                                                                                                                                                                                                                                                           3909
                                                                                                                                                                                                                                                                                                                                                                                                                3853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   624
                                                                                                                                                                         984
                                                                                                                                                                                                                                        924
                                                                                                                                                                                                                                                                                                                                                                                                                                               744
```

```
밁
                                                                  Ś
                                                                                              밁
                                                                                                                        ş
                                                                                                                                                   밁
                                                                                                                                                                         S
                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                  The invention relates to a nucleic acid comprising a sequence of 18 CC bases, of a segment of chemically pretreated DNA (CP DNA) e.g. with CP bisulphite, of genes associated with tumour suppression and oncogenes CC having a sequence taken from 536 (actually 533 since numbers 408, 458 and CS 500 are missing from the sequence listing) sequences (Ss) and sequences (CC complementary to (Ss). The nucleic acid may be a peptide nucleic acid coligomer (PNA) of at least 9 nucleotides and may form part of a set of CC probes for detecting the cytosine methylation state and/or single CC nucleotide polymorphisms and also to be used in an array for analysing CC diseases associated with CpG dinucleotides e.g. cancers and tumours. The probes can also be used in a method for ascertaining genetic and/or cepigenetic parameters for the diagnosis and/or therapy of existing CC cytosine methylations. The parameters may be compared to another set of CC genetic and/or epigenetic parameters may be compared to another set of CC genetic and/or epigenetic parameters the differences serving as basis CC for diagnosis and/or prognosis events which are diagnosis as basis CC data for this patent did not form and oncogenes. Note: The sequence CC data for this patent did not format of the printed specification, but CC was obtained in electronic format directly from WIPO at CC fit, wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                         Query Match
Best Local Simi
Matches 328;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15-MAR-2000; 2000DE-01013847.
06-APR-2000; 2000DE-01019058.
07-APR-2000; 2000DE-01019173.
30-JUN-2000; 2000DE-01032529.
01-SEP-2000; 2000DE-01043826.
                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fragments
genes and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human; tumour suppressor gene; oncogene; antitumour; cytostatic; cancer; tumour; CpG dinucleotide; single-nucleotide polymorphism; SNP; cytosine methylation; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-MAR-2001; 2001WO-EP002955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (EPIG-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۶
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sapiens
                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EPIGENOMICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    s of chemically modified genes associated with tumor suppressor d oncogenes, useful in designing primers and probes for analyzing associated with cytosine methylation state e.g. cancer.
AGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATT
                                                                                                                      TGTAGAAACTACTGGAA----AACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATA
                                                                                                                                                                            TGTTGATGTAAATAATGTGATTAAGAAAAATGTAGAAGCCAAAAATCGGAAGACATGCTAT
                                                                                                                                                                                                                                                              7442 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 409; 27pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Piepenbrock
                                                                                              TATTAAAAAAATAAAAATCTAATAAAAAAATAAAAATCTAAAAATAAAACGAAATTT
                                         TTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATG
                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                              1655 A; 214 C; 1934 G; 3636 T; 0 U; 3 Other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                        45.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ņ
                                                                                                                                                                                                          <u>.</u>
                                                                                                                                                                                                                       Score 67.6; DB 4
Pred. No. 0.0079;
                                                                                                                                                                                                          Mismatches 384;
                                                                                                                                                                                                                                    DB 4;
                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                    7442;
                                                                                                                                                                                                          10;
                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   analyzing
               9247
                                                                   9187
                                                                                                                         9127
                                                                                                                                                   2620
                                                                                                                                                                               9071
                                          2500
                                                                                              2560
 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                            3680/c
AAL53680
                                                                                                                                                                                                                                    Key
5'UTR
                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                      Cytostatic; chromosome 10 arginine-rich gene therapy; human; gene; ds.
                                                                                                                                                                                                                                                                                                                                              Genomic DNA sequence part 1 of the human ch10-ARPR protein
                                                                                                                                                                                                                                                                                                                                                                                                    AAL53680
                                                                                  intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -- AATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATATGATAAAAATTATAATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ТАЙАЙАЙАЙАЙА АССИЙЛЯЛ СТАЙАЙАЙАЙАЛАЛ СТАЙАЛАЛАЙАЛАЙ ТАЙАЛАТСТАЛ 2380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAAAATAATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                             standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA 9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTCTGAAAAAGCATACAAAAAATTGACATATCAATCAAAGAGAGGAGAAAAAGGGAAAA 9721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCATGCTGCAGCTGCCTACCGCCACCTATTGAAAAAAATGAAGTAAAATTT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
               10640. .10767
/*tag= c
/number= 2
                                                    /*tag= c
/number= 1
1078. .10639
/*tag= d
/number= 1
                                                                                                                           963.
                                                                                                                                                                                                                                    Location/Qualifiers 927. .962
/number= 2
10768. .13294
                                                                                                                                                   /product= "Part
/note= "No stop
                                                                                                                                                                            partial
                                                                                                                                                                                          +tag=
                                                                                                                                      ntrons"
                                                                                                                                                                                                                                                                                                                                                                                                                             DNA;
                                                                                                                        .1077
                                                                                                                                                                                                          .13435
                                                                                                                                                                                            ۵
                                                                                                                                                                                                                                                                                                                                                                                                                             15507
                                                                                                                                                   of the ch10-ARPR human codon. Coding sequence
                                                                                                                                                                                                                                                                                                                   protein; ch10-ARPR; ARPR; cancer;
```

9601

2020

2200 9487

contains

```
á
                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                         S
                                                                                                                                                         Ś
                                                                                                                                                                                               밁
                           S
                                                            밁
                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Simi
Matches 158;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             related polypeptides (chi0-ARR), or their fragments. The polypeptides, nucleic acids and antibodies are useful for detecting and/or monitoring and treating conditions involving aberrant expression of ARRR or uncentrolled growth of tissues, such as cancer. The polypeptides are useful as hybridisation probes, in chromosome and gene mapping, for the generation of antisense RNA or DNA and in tissue or cell typing. The methods are useful for detecting and measuring quantities of ARRR in tissues and biological fluids. The host cells are useful for replicating ARRR transcripts or expressing the ARRR proteins or polypeptides. The polypucleotides of the invention can be used to treat disorders by gene therapy. This sequence represents the genomic DNA sequence, part 1, of the human chilo-ARPR protein of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 15507 BP; 4046 A; 3576 C; 3266 G; 4618 T; 0 U; 1 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 8; Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New isolated chromosome 10 arginine-rich protein related polypeptides, useful for detecting and/or monitoring and treating conditions involvi aberrant expression of ARPR or uncontrolled growth of tissues, such as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2003-040654/03.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bougueleret L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-MAR-2001;
24-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26-MAR-2002; 2002WO-EP003395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200279246-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (GENE-) GENEPROT INC
                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                               12680
                                                                                                                                                                                                                                                                                                                                                                    7105 GTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAATATTAAGCAAACAGCAGCA 7164
                                                                                                                                                                                                                                                                   AATGCAGGAATCGGAGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACA
                                                                                                                                                                                                                                GCTGTAGAAGATAGAAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGAC
GCAGCAGAAGC
                               GGAATTAAAGC
                                                                                             GCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAA
                                                                                                                               GCAGCAGCAGAAGAAGCATAAGAAGCAGTAGAAGAAGCAGCAGAAGAAGCAGTAGAAGCA
                                                                                                                                                               GAAGTTAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCA
                                                                                                                                                                                               GAÄGAÄGAÄGAÄGAÄTGAATGAAGAAGAAGAÄGAÄGAÄGAÄGAAGAAGCATGCAGCAGCAGCA
                                                               ĠĊĄĠĄĄGĊĄGĊĄĠĊĄĠĄĄĠĄĄĠĊĄĠĊĄĠĄĄĠŢĠĠĄĠĠŖĄŢĊĄĠĄĄĠĊĄĠĊĄĠĄĄĠĊĄĠĄ
                                                                                                                                                                                                                                                                                                                                                                                                     .Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001US-0280673P.
2001US-0293453P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         relates to isolated chromosome 10 arginine-rich protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        55-65; 82pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Niknejad A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /*tag= d
/number= 2
13295. .13435
/*tag= c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   number=
                                                                                                                                                                                                                                                                                                                                                                                                                  0.7%;
 12550
                               7415
                                                                                                                                                                                                                                                                                                                                                                                                   .
.
                                                                                                                                                                                                                                                                                                                                                                                                                    Score 66.2; DB 8; Length 15507; Pred. No. 0.018;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bairoch A;
                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches 153;
                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            involving
                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                      12801
                                                                                                7404
                                                                                                                                                                  7344
                                                                                                                                                                                                                                    7284
                                                                                                                                                                                                                                                                                                    7224
                                                                                                                                                                                                                                                                     1274
                                                                   1256
                                                                                                                                 1262:
                                                                                                                                                                                                                                                                                                                                                                                                      0
```

S 밁 á

8819 ACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAG

8759 AAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAG

Query Match Best Local Sin Matches 403;

Similarity

41.8%; 0.7%;

Score 65.8; DB 12; Pred. No. 0.0098; Pred. No. 0.0098;

Length 1000; Indels

0;

Gaps

0

8818

Conservative

```
RESULT 37
ADQ62833
ID ADQ6283
XX ADQ62
XX B8; r WO200
XX WFluor
XX WFluor
XX WO200
XX WO200
XX WO200
XX ADQ62
XX ADQ62
XX B8; r WO200
XX B8; r WW 19-00
XX B9; r WW 19-00
XX WO200
XX WO200
XX ADQ60
XX A
                                                          The invention relates to a method of detecting a nuclease-mediated cleavage of a target nucleic acid or measuring a RNaseH activity of an expent by hybridizing a target nucleic acid to a fluorescently labelled coligonucleotide probe complementary to the target nucleic acid and containing a fluorophore at one terminus and a quenching group at the context for the target nucleic acid, the probe-target hybrid with an agent the fluorophore and quencher in such proximity that the quencher for the fluorophore and quencher in such proximity that the quencher quenches the fluorescent signal of the fluorophore. Formation of the probe-target for reduce quenching of the fluorescent signal of the fluorophore and quencher to selectively cleave the target nucleic acid and thus release the intact probe. Detection of the release of the probe is by measuring a decrease in the fluorescent signal of the fluorophore as compared to the specificity of the strong enzymatic degradation of an RNA-DNA duplex. In an example of the specificity of the RNaseH from E. coli or HIV reverse transcriptase is measure by the methods of the invention. in order to test the specificity of the RNaseH from E. coli or HIV reverse corresponds to the single stranded homopolymeric polya RNA contaminant is added to the assay reaction. This sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Detecting a nuclease-mediated cleavage of a target nucleic acid, useful for detecting and monitoring RNase H activity, comprises hybridizing a target nucleic acid to a fluorescently labeled oligonucleotide probe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fluorophore; fluoresce reverse transcriptase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ss; nuclease-mediated cleavage; target nucleic acid; RNaseH activity;
fluorophore; fluorescence quencher; fluorescent signal; HIV;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homopoly-A contaminant for RNaseH activity assay
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-OCT-2004 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADQ62833 standard; RNA; 1000 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2004-543471/52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23-DEC-2002; 2002US-0436125P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22-DEC-2003; 2003WO-US040879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO2004059012-A1
   Sequence 1000 BP; 1000 A; 0 C; 0 G; 0 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 4; 61pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O'connell
```

```
RESULT 38
ADQ62832/c
ID ADQ62832 standard; RNA; 1000 BI
XX
AC ADQ62832;
XX
DT 07-OCT-2004 (first entry)
XX
DE Homopoly-U contaminant for RNas
                                                                                                                        δ
                                                                                                                                                 문
                                                                                                                                                                   Ś
                                                                                                                                                                                        밁
                                                                                                                                                                                                       S
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
Homopoly-U contaminant for RNaseH activity assay
                                                                                                                              9719
                                                                                                                                                                                                                                                                                                                               9419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9179
                                                                                                                                                                                                                                                                                                                                                                                                           9299
                                                                                                                                                                                                                                                                                                                                                                                                                                                 9239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8879
                                                                                                             961
                                                                                                                                                                                        841
                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                               AAAAA 9723
                                                                                                                                                 ATAAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGC
                                                                                                                                                                                                                            AATTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTA
                                                                                                                                                                                                                                                                   ATGCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAA
                                                                                                                                                                                                                                                                                                         TATATGCCGGATATGATAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGG
                                                                                                                                                                                                                                                                                                                                                TAAATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                         ATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                              CCAAAAATTCAAAAATAATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGAAGCCAAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATG
                                                                                                                                                                                                                                                                                                                                                                                      965
                                                                                                                                                                                                                                                9598
                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 8998
                                                                                                                                                                                                         9658
                                                                                                                                                                                                                             840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
```

S 밁 Ś 문 Ś 밁 S

8939 TAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAA 8998

GGGAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATG 8938

881

ACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAAATACAATTTCAG AAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAG 8818 Matches Query Match Best Local Sequence

Similarity

0.7%; 41.8%;

Score 65.8; DB 1 Pred. No. 0.0098; Mismatches

DB 12; 562;

1000; 0,

Indels Length

Gaps

0

Conservative

0,

1000

BP; 0 A; 0 C; 0 G; 0 T; 1000 U; 0 Other;

```
containing a fluorophore at one terminus and a quenching group at the cother terminus and contacting the probe-target hybrid with an agent the having nuclease activity. When the oligonucleotide probe is unhybridised to the target nucleic acid, the probe adopts a conformation that places controlled the fluorophore and quencher in such proximity that the quencher quenches the fluorophore and quencher in such proximity that the quencher to contacting the probe-target hybrid causes sufficient separation of the fluorophore and quencher to contacting the probe-target hybrid with an agent having nuclease activity to selectively cleave the target nucleic acid and thus release the intact probe. Detection of the release of the probe is by measuring a decrease in the fluorescent signal of the fluorophore as compared to the signal of the probe target hybrid. The methods are useful for detecting and contacting enzymatic degradation of an NNA-DNA duplex. In an example of the invention, the activity of the RNaseH from E. coli or HIV reverse transcriptase is measure by the method of the invention. in order to test the specificity of the RNaseH from E. coli or HIV reverse transcriptase is measure by the method of the invention. in order to test the specificity of the RNaseH from E. coli or HIV reverse transcriptase is measure by the method of the invention. in order to test the specificity of the RNaseH from E. coli or HIV reverse transcriptase is measure by the method of the invention. In order to test the specificity of the RNaseH from E. coli or HIV reverse transcriptase is measure by the method of the invention. In order to test to the specificity of the RNaseH from E. coli or HIV reverse transcriptase is added to the assay reaction. This sequence corresponds to the single stranded homopolymeric polyU RNA contaminant is added to the assay reaction.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to a method of detecting a nuclease-mediated cleavage of a target nucleic acid or measuring a RNaseH activity of an agent by hybridizing a target nucleic acid to a fluorescently labelled oligonucleotide probe complementary to the target nucleic acid and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Detecting a nuclease-mediated cleavage of a target nucleic acid, useful for detecting and monitoring RNase H activity, comprises hybridizing a target nucleic acid to a fluorescently labeled oligonucleotide probe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example 1; SEQ ID NO 3; 61pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2004-543471/52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ss; nuclease-mediated cleavage; target nucleic acid; RNaseH activity; fluorophore; fluorescence quencher; fluorescent signal; HIV;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23-DEC-2002; 2002US-0436125P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22-DEC-2003;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO2004059012-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 reverse transcriptase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (AMHP ) WYETH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             O'connell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2003WO-US040879
```

```
RESULT 39
AAA70105
ID AAA70
                                                                     Plasmodium falciparum; chromosome 2; human malaria parasite; vaccine; antimalarial; malaria; protozoacide; infection; insecticide; ds.
                                                                                                                                   07-NOV-2000
                                                                                                                                                                                  AAA70105 standard;
 11-MAY-2000
                       WO200025728-A2
                                               Plasmodium falciparum
                                                                                                          Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9059
                                                                                                                                                                                                                                                                       9719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       820
                                                                                                                                                                                                                                                                                                100
                                                                                                                                                                                                                                                                                                                                                                                                                                                   280
                                                                                                                                                                                                                                               40
                                                                                                                                                                                                                                                                       AAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAAATAGAACTAATAATGTTGATTTAGCAGGAAAAATTTAAAACAGAGGGAAACATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAAAAATTCAAAAAATAATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGAAGCCAAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                        AATTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATATGCCGGATATGATAAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAA
                                                                                                                                                                                                                                                                                                                      ATGCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                       9723
                                                                                                                                                                                                                                               36
                                                                                                                                                                                    DNA;
                                                                                                          chromosome 2 related DNA sequence SEQ ID NO:238
                                                                                                                                                                                    5940
                                                                                                                                                                                    ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 9238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 9538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9478
                                                                                                                                                                                                                                                                                                                                                                                                   161
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                              S
                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                       밁
                         밁
                                               S
                                                                         밁
                                                                                             Ś
                                                                                                                       밁
                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 472; Conserv
                                                                                                                                                                                                                                                                                                                                                                         Sequence 5940 BP; 3106 A; 343 C; 879 G; 1612 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HOFF/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (GARD/)
                                                                                                                                                                                                                                                                          136
370 AATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAATGGAGTTATCAATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                          GCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTTAACTTTGTC
                                                                                                                                                                        ATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATCACCGCGACT
                                                                                                                                                                                                                                                                          ATAGAAACTAAAGGAAAAAGTAAAACTAAATATAAAAATGATAATTCCTTAGATGATAAT
                                                                                                                                           ATTCAAGGGGAGAACGCTTTTAACAGTTTTTAATAGATTTGCTTTTAACAGAAAATAATATA
                                                                                                                                                                                                                         ATTAATGAGGACATAATAATAATAATAATAATAATAATGATAATAATAATGATAAC
                                                                                                                                                                                                                                                                                                 ATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAAGTTTTAATG
                         AATGGAAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAAATTGGAGGA
                                                                         TAAAGACAATGAGCTAGAAAACCAGCTTAAGGATACATTAAAGTCCATTAGTTCGTTGTC
                                                                                                                          AATAATGATAATAATATTTTAATAATTATAGC-GATGAAATATCAAAAAATATTATACA
```

Conservative

0

0.7%; 44.7%;

Score 65.4; Pred. No. 0. Mismatches

. 02 ; DB 3; 571;

0 U; 0 Other, Length Indels

5940; 14;

Gaps

69

129

189

369

434 309 374 249

429 494 Ś 밁

밁 Ş 밁 ঠ 밁

밁 á 밁 5 밁

δ

Ś

Ş 밁 S 밁 8 밁 á 밁 á 밁 Ś 8

밁

```
The present invention describes proteins and their fragments (1) encoded CC by chromosome 2 of the human malarial parasite, Plasmodium falciparum. CC Also described are: (1) nucleotide sequences (II) encoding (I); and (2) vaccines against P. falciparum infection comprising (I) or (II). (I) and (II) are useful for the development of vaccines against P. falciparum infection or a monoclonal antibody raised to immunogens comprising the sequences of (I) are useful in the detection of infection with P. falciparum. Furthermore, (I) (especially when they are rifins or secreted or membrane proteins) can aid the identification of drugs to treat or prevent P. falciparum infection, or they can be used to identify drug resistance in P. falciparum. Sequencing of the complexity drug the subsequent identification of proteins (I) especially when they can be used to dentify drug resistance in P. falciparum. Sequencing of the complexity of the parasitic lifecycle, and caprocess hampered by the complexity of the parasitic lifecycle, and convide new targets for vaccine and drug development. Parasite resistance to drugs and mesquito resistance to insecticides have led to a resurgence of malaria in many parts of the world, and there is a pressing need for vaccines and new drugs. AAA70078 to AAA70287 and AAB18152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Proteins encoded by chromosome 2 of the human malarial parasite, plasmodium falciparum, useful as antimalarial vaccines and in the diagnosis of P.falciparum infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Page 460-462; 577pp; English.
represent nucleotide and protein sequences given in the present invention, but which are not specifically mentioned within the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HOFFMAN S.
CARUCCI D.
GARDNER M.
VENTER J C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Carucci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99WO-US026796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0107131P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gardner M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Venter
```

ş 밁

밁

```
ADZ77266
ID ADZ772AC ADZ772
AC ADZ77
                                   27-APR-2005
                                                                                                 EP1526178-A1
                                                                                                                                                                                                                                                                                                                  Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                      Nucleic acid vaccine; plasmodium falciparum infection; antimalarial; infection; merozoite surface protein 3-like gene; MSP-3-8; chromosom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Plasmodium falciparum MSP-3-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14-JUL-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADZ72266 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       430
                                                                                                                                                                                                                                                                                                                                                                               ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATGGATATTGAAAAAAGAGAACATAATTTCCTTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTTGACATTACAGCTGAAGCAAAGAATTTCTATGAT 1065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGGGAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGAAATACCA-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAACGATTTCTATAGAAATTATAGATATTAAAA----AACATCTAGAAAAACTAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATTTTGTTAAACAAAAATTGATATGCTAAATGAAAAAGAAAATCTTTTACAAGAA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTGGAAGAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAGGATAAGAATATTGATAATGATTATGAAAATAAATTAAAAGA----AAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAATTAAAAGATGAAAAGATTTCCATTTTAGAAAAAGTTCATTCCATTAAAGTAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGAAAAAGAAACTTATAACACTCCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAAATAAACAAATTGATTTATTAAACAAACAAGAAAAAGAAAAGGAAAAGGAAAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATTAGTGCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAATGTACTAAAAGAATTAAAAGGATGTGTTAAGGAAAAAAATGAAACCATTAATTCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCTCAAAAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAATAAAAGAAAAAAAGAAGATTTAGAAAATTTAAATAAAAATTGTTATCAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGATTTAAAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATTACAGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAAGGAAGAAACATTTCATAATATAGAAAAAGAGTATTTAGAAAAAAATAAAGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGCATCGGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAACATGGTAAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAAATTCCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                      /*tag=
                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                            /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA;
                                                                                                                                                                                                                      .2289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2289
                                                                                                                                                            "Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene,
                                                                                                                                                         falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MSP-3-8 SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                          gene; MSP-3-8; chromosome
                                                                                                                                                         MSP-3-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
:
                                                                                                                                                         protein'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1082
                                                                                                                                                                                                                                                                                                                                                                                                             10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                909
```

유 밁 Ş B Ş 밁 S 밁 8 밁 Ş

ঠ 용 Ş B ঠ 밁 Ş

밁

```
Ş
                                                                      В
                                                                                                 Ş
                                                                                                                                        밁
                                                                                                                                                                         Ś
                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 193; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention relates to the protection against malaria. More particularly, the invention pertains to a family of MSP-3 (merozoite surface protein 3)-like genes (MSP-3-1, MSP-3-2, MSP-3-3, MSP-3-4, MSP-3-5, MSP-3-7 and MSP-3-8) located on chromosome 10 of Plasmodium falciparum, highly conserved in P. falciparum strains, simultaneously expressed in P. falciparum at the erythrocytic stages and encoding proteins which have a Asn-Leu-Arg-Asn or Asn-Leu-Arg-Lys signature at their N-terminal extremity and which are located at the merozoite surface. The characterization of this gene family enables the definition of immunogenic and vaccine compositions against P. falciparum. The present sequence is the P. falciparum MSP-3-8 gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Novel MSP-3-like family genes located on chromosome 10 of Plasmodium falciparum, which encode proteins useful for preparing vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2289 BP; 1009 A; 266 C; 391 G; 623 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 11; SEQ ID NO 15; 137pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             compositions against malaria.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-OCT-2003;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (INSP ) INST
2185
                                   7471
                                                                      2125
                                                                                                       7411
                                                                                                                                            2065
                                                                                                                                                                                                                2005
                                                                                                                                                                                                                                                 7291
                                                                                                                                                                                                                                                                                      1945
                                                                                                                                                                                                                                                                                                                                                             1885
                                                                                                                                                                                                                                                                                                                                                                                                                                 1825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2005-323987/34.
)B; ADZ72267.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ש
                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAATATTAAGCAAACAGCAGCAAATGCA 7170
                                                                                                                                                                                                                                                                                                                                                                                            GGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGTA
                                                                                                                                                                                                                                                                                                                        GAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGTT
                                                                                                                                                                                                                                                                                                                                                             TATATAACAGAAGAAGAATAAAAGAAGATATAGAAGAAGAAACAGAAGAAGATATAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAAGCGAAGATGTACTGGAAGAGATAGAAGAAGAAATTAATACAGATGGGGAAATAGAA
 CATACTTTAGTAAATTCAATTATTAGTTTATTAGAAGAAGGTAATG
                                   AAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTG
                                                                                                       AAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGGAC
                                                                                                                                                                             ATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAATT
                                                                                                                                                                                                                                                 AACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGGT
                                                                                                                                                                                                                                                                                      <u>AAAGCTCGAAATTTAATTTCTAAAAATTATAAAAATTATAATGAACTAGATAAAAACGTT</u>
                                                                                                                                            ATAGATAAAAATACAGATACCAGTGAAAAGAAAGGATTTAATAATTCAGAAAAAGATGAA
                                                                                                                                                                                                                  0.7%;
ilarity 47.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PASTEUR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2003EP-00292673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2003EP-00292673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 65.2; DB 14;
Pred. No. 0.016;
D; Mismatches 213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
 2230
                                   7516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MSP-3-
                                                                                                                                                                                                                                                                                                                          7290
                                                                                                                                                                                                                                                                                                                                                                                                                                 1884
                                                                                                                                                                                                                                                                                                                                                             1944
                                                                                                           7470
```

Search Job tim time : completed: November me : 3488 secs 25, 2005, 05:40:32

Page 1

```
GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

OM nucleic - nucleic search, using sw model

Run on:
November 25, 2005, 03:43:28; Search time 22519 Seconds (without alignments)
20207.432 Million cell updates/sec

Title:
US-10-647-057-8
Perfect score: 9726
Sequence:
1 atgagcggcatcaaaaataa.....gagaaaaagggaaaaaatga 9726
```

Sequence: 1 atgagcggcatcaaaaataa.....
Scoring table: IDENTITY NUC
Gapop 10-0 , Gapext 1.0

Searched: 41078325 seqs, 23393541228 residues

Total number of hits satisfying chosen parameters: 82156650

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

1: gb_est1:*
2: gb_est2:*
3: gb_est2:*
4: gb_htc:*
5: gb_est4:*
6: gb_est6:*
7: gb_est6:*
9: gb_est7:*
9: gb_gs2:*
11: gb_gs2:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

20 21 22	c 18	c 13	c 9	c c	ο ο αω 4 τυ	Regult No.
91.8 91.8 91.8	93.2 93.2	95.4 95.2 93.8	96.8 96.2	97.8 97.4 97.2	100.8	Score
0001		1111	1.0 1.0	111	11.0	Query Match Length
1256 1485 1808	1416 1531 1594	1547 1784 1721 1482	1519 1691 2001	1491 1615 1434	1811 1917 1452 1843	
100	100	10 10	10 8 10	10	100	10
CL119201 CL119201 CL076558 CL076558 DR125630	CL499036 CG748014 CL110653	CL066420 CL081992 DR145459 AG332292	AG386893 DR124185 CL118787	CG753221 AG311072 AJ592058	CG753732 CL081899 CL125503 AG435185	ID CG757757
CL118/09 1881-7611 CL119201 1881-76J1 CL076558 CH216-139 DR125630 49096520		4	AG386893 Mus muscu DR124185 49179719 CL118787 ISB1-72M2	CG753221 P048-2-A0 AG311072 Mus muscu AJ592058 Arabidops	CG753732 P048-4-G0 CL081899 CH216-164 CL125503 ISB1-87B2 AG435185 Mus muscu	10

							a								a	a	O	Ω		G	a
4. A	43	42	41	40	39	38	37	36	35	34	ω u	32	31	30	29	28	27	26	25	24	23
86.4 86.4	86.4	86.6	86.6	87	87.2	87.2	87.2	87.4	87.6	87.8	88.6	89.2	89.6	90.2	90.2	90.2	90.6	91.2	91.4	91.4	91.6
9.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
1616	1314	1816	1438	1650	1783	1512	1139	1428	1457	2071	1434	1932	1824	1618	1407	1401	1507	1981	1829	1453	1528
° E	10	10	10	10	ထ	10	-	10	10	œ	9	80	10	10	10	10	10	10	10	10	10
CL081995	CL077082	CL118629	CL078561	CL041163	DR141924	CL113943	AJ927291	CL081978	CL082658	DR147304	CC187638	DR141720	CL081234	CL027236	AJ592026	AG289820	AG346189	CL082000	CL109409	AJ591978	CG753854
CL081995 CH216-165	CL077082 CH216-143	CL118629 ISB1-72E1	CL078561 CH216-151	CL041163 CH216-51P	DR141924 49190649	CL113943 ISB1-59E2	AJ927291 AJ927291	CL081978 CH216-165	CL082658 CH216-169	DR147304 49027161	CC187638 CH261-98P	DR141720 49300102	CL081234 CH216-161	CL027236 CH216-25H	AJ592026 Arabidops	AG289820 Mus muscu	AG346189 Mus muscu	CL082000 CH216-165	CL109409 ISB1-51H2	AJ591978 Arabidops	CG753854 P049-1-D0

ALIGNMENTS

Qy 8422 AAGCAA 	Query Match Best Local Similarity Matches 482; Conser	ORIGIN	٠			source		Email: r		Spemanns Tel: 004	Max-Plan	COMMENT Contact:		pacificus JOURNAL Mol. Gene	TITLE An integ	Buntjer,		Nec		MSISM	SOURCE Pristionchis		8		DESTRICTION CG757757	757/c	RESULT 1
8422 AAGCAAGATTATGAAAATAATGATTACACAAAAAAAATATATTTCAGAAGTCAATGCTCTT 8481	1.1%; Score 104; DB 10; Length 1566; llarity 37.0%; Pred. No. 4.9e-10; Conservative 0; Mismatches 820; Indels 0; Gaps 0;	vector."	<pre>/clone_lib="ppa EcoRI BAC Library" /note="The library was generated by a partial digest of the generation NA with EcoRI and cloning into the BAC</pre>	/strain="California" /db_xref="taxon:54126"	/organism="pristionenus pacificus" /mol_type="genomic DNA"	,	Location/Onalifiers	Email: ralf.sommer@tuebingen.mpg.de Class: RAC ends	00497071601498	Spemannstr. 37-39, Tuebingen D-72076, Germany Tel: 00497071601371	Max-Planck-Institute for Developmental Biology	Contact: Sommer RJ	7	pacificus Mol. Genet. Genomics 269 (5), 715-722 (2003)	An integrated physical and genetic map of the nematode Pristionchus	Buntjer,J., van der Meulen,M. and Sommer,R.J.	nimpan T Cina W Joseph Wingers-Derebolto I. Janeen K	Pristionchus.	Eukaryota; Metazoa; Nematoda; Chromadorea; Diplogasterida;	Pristionchus pacificus	ichiia pacificiia	CG757757.1 GI:37986636		genomic survey sequence.	1566		

Ş

음 성 음 성 음

ঠ

8 8 8 8 8

В

```
9262
                                                                                                                                                                                                                                                                                                                                                                                                               9202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   964
484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCACAAGGAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAA
                                                                     TATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCT
                                                                                                                                               TTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAAT
                                                                                                                                                                                                                          GACGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAAAGATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAATCATCCATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGTGCAT
ACTITAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGT
                                                                                                                                                                                                                                                                                                                                                                          AATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1085
                                  9561
425
                                                                                                                                                                                                                       605
                                                                                                                                                                                                                                                                                                                                                                                                                                                 785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          965
```

S

음 성 음 성 음

S

중 음 중 음

8 8 8 8

밁

8 8 8 8 8 8

```
JOURNAL
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 2
CG753732/c
                                                                                              ঠ
                                                                                                                                   片
                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
뭉
                       Ś
                                                               밁
                                                                                                                                                                                                      문
                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                        Query Match 1.0%;
Best Local Similarity 34.2%;
Matches 567; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9562 TTTAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Max-Planck-Institute for Developmental Biology Spemannstr. 37-39, Tuebingen D-72076, Germany Tel: 00497071601371
Fax: 00497071601498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pristionchus pacificus
Eukaryota; Metazoa; Nematoda; Chromadorea; Diplogasterida;
Neodiplogasteridae; Pristionchus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CG753732 1811 bp [F048-4-G03.ya Ppa EcoRI BAC Library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (bäses 1 to 1811)
Srinivasan, J. Sinz, W., Jesse, T., Wiggers-Perebolte, L., Jansen, K.,
Buntjer, J., van der Meulen, M. and Sommer, R. J.
An integrated physical and genetic map of the nematode Pristionchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Sommer RJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pristionchus pacificus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           genomic survey sequence.
CG753732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12884007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pacificus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CG753732.1
                               GGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGAA
                                                                                                                                                                     ACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGA
                                                                                                                                                                                                                                        AAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAAA
                                                                 GTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAGGAA
                                                                                                                                     AAATTGACATATCAAAGAGAGAGAAAAAAGGGAAAAAA 9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genet. Genomics 269 (5), 715-722 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ralf.sommer@tuebingen.mpg
                                                                                                                                                                                                                                                                                                                                                        /organism="Pristionchus pacificus"
/mol_types"genomic DNA"
/strain="California"
/db xref="taxon:54126"
/clome_lb="Ppa EcoRI BAC Library"
/clome_The library was generated by a partial digest the genomic DNA with EcoRI and cloning into the BAC vector."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1. .1811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:37978509
                                                                                                                                                                                                                                                                        °.
                                                                                                                                                                                                                                                                                        Score 100.8; DB 10;
Pred. No. 2.3e-09;
                                                                                                                                                                                                                                                                          Mismatches 1090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA linear GSS 24-OCT-2003
/ Pristionchus pacificus genomic,
                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                          Length 1811;
                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                          Gape
                                                                                                                                                                                                                                                                                                                                                                                                 Ö,
                                 8307
                                                                   1572
                                                                                                   8247
                                                                                                                                                                     8187
                                                                                                                                                                                                        1692
                                                                                                                                                                                                                                          8127
```

& & &

문

```
1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1331
                                    493
GGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTATAAT 9447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCAGGA
                                                                                                                                                                              GCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAATTTG
                                                                                                                                                                                                                                                                                                                            AAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCT 9147
                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGA 908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGT 8721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGA 8607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAA 8427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGGAGCA
                                    GCCAAAGCGACAGTTAGTGTAAAGAATCAAATAAATAGAACTAATAATGTTGATTTAGCA
                                                                                                        ACTACAGGAGCATTGGTTGCAGGAAATTGGGAAAATTGGAGATAAATTAGAAACGATTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTA 8487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1212
                                  434
                                                                                                          494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                974
                                                                                                                                                                              554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1034
```

S

음 중

중 유

밁 გ 밁 ð 문 Ś 밁 8 밁 S 용 ş 밁 δ 밁 S 밁 Ś 밁 ঠ 밁 á 밁 S 밁 ş 밁 S

```
RESULT 3
CLO81899
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
밁
                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                     Matches
                                                                                                                                                                                                                                                                                                                               source
                                 8421 AAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCT 8480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9688 ACATATCAATCAAAGAGAGGAGAAAAAGGGGAAAAAATGA 9726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        133 TNATAACAATAANCATCGGCACNCAATNAGGAAGAATTA 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae; Xenopodinae; Xenopous; Silurana.

1 (bases 1 to 1917)

Kremitzki, C., Carter, J., McPherson, J., Warren, W., Graves, T., Wardis, B. and Wilson, R.

A physical map of the xenopus tropicalis genome Unpublished (2003)

Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                   Insert Length: 175000 Std Error:
Seq primer: Sp5 atctgccgtttcgatcct
Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                High quality sequence start: 1062
High quality sequence stop: 1140.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genome Sequencing Center
Washington University School of Medicine
Email: submissions@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Xenopus tropicalis
Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CL081899 1917 bp DNA linear GSS 31 CH216-164L24 Sp5.1 CH216 Xenopus tropicalis genomic clone CH216-164L24, genomic survey sequence.
CL081899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CL081899.1 GI:40537812
                                                                                      Similarity
GTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAAGCATACAAAAAATTG 968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCTAATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Xenopus tropicalis"
/mol type="genomic DNA"
/strain="Nigerian frog"
/db_xref="taxon:8364"
                                                                                                                                                        /sex="male"
/cell line="Stock 248 F7A2,
/clone_lib="CH216"
/note="Vector: pTARBAC2.1; C
                                                                                                                                                                                                                                             clone="CH216-164L24"
                                                                                  1.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (western clawed
                                                                                    Score 100.8; DB 1
Pred. No. 2.3e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                          Std Error: 0.00
                                                                    Mismatches
                                                                                                     DB 10;
                                                                                                                                                                          CHORI-216 Xenopus
                                                                    740;
                                                                                                                                                                                                          inbred N7"
                                                                                                     Length
                                                                                                     1917;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GSS 31-DEC-2003
                                                                  Ç,
                                                                                                                                                                          tropicalis
                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          254
```

```
1047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGT 884C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAAC 8780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAAATTATGGAAA 8660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               АСАЛАЛАЙСВАЛАЛАЙЙЛАЙАЛАЙАВАЛАЙСТАСТВАЙМССАСТВАСТВАЛАЛАЛАЙМАТА
                                                                                                                    TTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAA
                                                                                                                                                                                                                                                                              TACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                          AGACGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTAGATCTACAAGGAAAAAGTGGTGGCCTATGGTGGGAATTGGTATTGGAAATGTTGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAA 8600
TTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGC
                                                                                                                                                                                                                                                                                                                                                           АЛЛАЛАЛАЛАДАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАДАЛАЛАЛАЛАЛАЛАЛАЛАДАЛАЛАЛА 1046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGTGCA
                                                                            TGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGA
                                     1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                966
```

청 음 청

8 8 8 8 8 8 8 8 8

밁

S

중 음 중

음 성 음 성 음

밁

중 음 중

ঠ

8 8 8 8 8 8 8 8

문

```
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 4
CL125503
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ફ
                                                               밁
                                                                                             Ś
                                                                                                                                 밁
                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
밁
                     S
                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                    Query Match 1.0%; Score 100; DB 10; Best Local Similarity 41.3%; Pred. No. 3.1e-09; Matches 558; Conservative 0; Mismatches 792;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1462
                                                                                                                                                                                                                                                                     23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 (bases 1 to 1452)
Kremitzki,C., Carter,J., McPherson,J., Warren,W.,
Mardis,E. and Wilson,R.
A physical map of the xenopus tropicalis genome
Unpublished (2003)
Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genome Sequencing Center
Washington University School of Medi
Email: submissions@watson.wustl.edu
Insert Length: 75000 Std Error: 0.
Seq primer: T7 TAATACGACTCACTATAGGG
Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   genomic survey sequence. CL125503 CL125503.1 GI:40619138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         High quality sequence start: High quality sequence stop: 1
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; I
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea;
Xenopodinae; Xenopus; Silurana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Xenopus tropicalis (western clawed frog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CL125503 1452 bp DNA linear GSS 05-JAN-20
ISB1-87B20_T7.1 ISB1 Xenopus tropicalis genomic clone ISB1-87B20,
                             TCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACT 8673
                                                                                                                                   GAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAATGAT
                                                                                                                                                                                                                                                                                                     AATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAA 9680
                                                                                              AACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTA 8613
                                                                                                                                                                                                                                                                     AAAATTGACATATCAATCAAAGAGAGGAGAAAAAAGGGAAAAAA 9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Xenopus tropicalis"
/mol type="genomic DNA"
/db xref="taxon:8364"
/clone="ISB1-87B20"
                                                                                                                                                                                                                                                                                                                                                                                                                         Library Segment
                                                                                                                                                                                                                                                                                                                                                                                                                          /clone_lib="ISB1"
/note="Vector: pBeloBAC11; ISB-1 Xenopus tropicalis
Library Segment 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.00
                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Euteleostomi; Pipidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSS 05-JAN-2004
                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                       82
                                                                                                                                                                                                                                                                                                      8433
                                                                                                                                   202
                                                                                                                                                                                                                                                                                                                                    ۲,
```

```
1043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCGACAGTTAGTGTAAAGAATCAAATAAATAGAACTAATAATGTTGATTTAGCAGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATTACTTTAGCATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAATTTGGCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACA
AAGAACAAACAAAAAAAAGAAACACAGAAAA 1373
                                             TCAATCAAAGAGAGAGAAAAAGGGAAAAAA 9723
                                                                                                                     CTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAAGCATACAAAAAATTGACATA
                                                                                                                                                                                 CTGGCAAGATTGGAAGGGAAAGCT-AATAAAAAAACGTCGGTAGGATCTAATCAGGTAGA
                                                                                                                                                                                                                                                                            GCCACTATTGAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTTAAAAAATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                AAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCTTCGGCAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTATAATATAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             АЛАААЛАААЛАЛААЛАЛААЛАААЛАААЛААЛААЛАЛАЛАДАЛАДАДАЛАДАДАЛА
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGAT
                                                                                           1222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1042
                                                                                                                                                                                 1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              622
```

र्ठ

밁

B & B & B & B

유

8 8 8 8 8 8 8 8 8 8 8 8 8

S

음 성 음

δ

음 성

유

S

밁

```
JOURNAL
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 5
AG435185/c
LOCUS
                                                                        ર
δ
                                      밁
                                                                                                                  밁
                                                                                                                                                8
                                                                                                                                                                                            문
                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 469; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Vector
R.Site 1
R.Site 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (17-NOV-2003) Masahira Hattori, The Institute of Phy, and Chemical Research (RIXEN), Genomic Sciences Center (GSC); 1-7-22 Suehiro-chou, Tsurumi-ku, Yokohama, Kanagawa, 230-0045, (B-mail:hattori@gsc.riken.jp, URL:http://hgp.gsc.riken.go.jp/, Tel:81-45-503-9111, Fax:81-45-503-9170)
Clones are derived from the mouse BAC library MSMg01. For BAC library availability, please contact Kuniya Abe (abe@rtc.riken Tsukuba Institute of Physical and Chemical Research (RIKEN) 3-1-1 Koyadai, Tsukuba, 305-0074 Japan phone: 81-298-36-9189, fax: 81-298-36-9199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence.
AG435185
AG435185.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Abe, K., Noguchi, H., Tagawa, K., Yuzuriha, M., Ezawa, K., Saitou, N., Hattori, M., Sakaki, Y., Shiroishi, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hattori, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contribution of Asian mouse subspecies Mus musculus molossinus genomic constitution of strain C57BL/6J, as defined by BAC-end sequence-SNP analysis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eu
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus molossinus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AG435185
Mus musculus molossinus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequencing : T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIMERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genome Res. 14 (12), 2439-2447 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus molossinus (Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LIBRARY
    TACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATTTCAGAAGTCAATG
                                        TTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTT
                                                                                                                  NNAAANAANAINININAININAININAINIAANNAININININININAAANNAINIAINININAAANNAA
                                                                                                                                                        GTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAA
                                                                                                                                                                                              AAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 1843)
                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  abe@rtc.riken.jp
                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Mus musculus mol
/mol type="genomic DNA"
/sub_species="molossinus"
/db_xref="taxon:57466"
/clone="MSMg01-313C22.T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .1843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                   /tissue type="mixture of
/clone_lib="MSMg01 Mouse
                                                                                                                                                                                                                                                                                                                                                                                                           /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : pBACe3.6
: EcoRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Toyoda, A., Noguchi, H., Kojima, T. and Sakaki, Y.
                                                                                                                                                                                                                                                                                        1.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:48078248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EcoRI.
                                                                                                                                                                                                                                                                                        Score 99.8; DB 10;
Pred. No. 3.6e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1843
DNA,
                                                                                                                                                                                                                                                                        Mismatches 1017;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bp DNA linear of
clone:MSMg01-313C22.T7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus.
                                                                                                                                                                                                                                                                                                                                                                       kidney and
Male BAC Li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 wild
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The Institute of Physical
                                                                                                                                                                                                                                                                                                                                                                     nd spleen"
Library"
                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                          Length 1843;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Toyoda, A., Kojima, T., Moriwaki, K. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (abe@rtc.riken.jp).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GSS 21-DEC-2004
, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Euteleostomi;
                                                                                                                                                                                                                                                                        ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Japar
                                        1646
                                                                              8416
                                                                                                                                                      8356
                                                                                                                                                                                              1766
                                                                                                                                                                                                                                  8296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ç
```

8 8 8 8 8

```
9437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCATGCACAAGGAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAAATTTAATGATGCGATCC
                                                                                                                                                                                                                                                                              ATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAA
                                                                                                                                                                                                                                                                                                                  TTAAAAATTTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATA 9256
                                                                                                                                                                                                                                                                                                                                                                               <u>AAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATTGGTAATTGGAAATGTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCA 8896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCCGTTGAAAATT
                                                   AAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTG
                                                                                                                  TTGATTTAGCAGGAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATA
                                                                                                                                                                                  AAGGAGACGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                         S
                                                                맑
                                                                                             Ş
                                                                                                                                 밁
                                                                                                                                                              ş
                                                                                                                                                                                              밁
   밁
                                                                                                                                                                                                                           S
```

Ş

밁

र्

S

경 음 경

성 음

밁

음 성 음

S

8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

밁

```
RESULT 6
CG753221/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 511; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pristionchus pacificus
Eukaryota; Metazoa; Nematoda; Chromadorea; Diplogasterida;
Neodiplogasteridae; Pristionchus.

1 (Dases 1 to 1491)
Srinivasan,J., Sinz,W., Jesse,T., Wiggers-Perebolte,L., Jansen,K.,
Buntjer,J., van der Meulen,M. and Sommer,R.J.
An integrated physical and genetic map of the nematode Pristionchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       genomic survey sequence CG753221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CG753221
P048-2-A01.za Ppa EcoRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Evolutionary Biology
Max-Planck-Institute for Developmental
Spemannstr. 37-39, Tuebingen D-72076, C
Tel: 00497071601371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Sommer RJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pacificus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pristionchus pacificus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CG753221.1 GI:37977480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12884007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mol. Genet. Genomics 269 (5), 715-722 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7ax: 00497071601498
                                  AACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTA
                                                                                                                                                                                 GAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAATGAT 8493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTAT 8433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAAAAATTGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAA 9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCAT 9676
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ralf.sommer@tuebingen.BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:54126"
/clone lib="Ppa EcoR! BAC Library"
/note="The library was generated by a partial digest
the genomic DNA with EcoR! and cloning into the BAC
vector."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Pristionchus
/mol_type="genomic DNA"
/strain="California"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .1491
                                                                                                                                                                                                                                                                                                                 1.0%;
37.9%;
                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                               Score 97.8; DB 10
Pred. No. 8.9e-09;
0; Mismatches 836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1491 bp DNA linear GSS 24-OCT-2003
BAC Library Pristionchus pacificus genomic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . mpg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pacificus"
                                                                                                                                                                                                                                                                                                                                  DB 10;
                                                                                                                                                                                                                                                                                                 836;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l Biology
Germany
                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nematode Pristionchus
                                                                                                                                                                                                                                                                                             ω
•
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9616
                                    8613
                                                                         1252
```

```
ATTAAAACAGAGGGAAACATCAATGTATATGCCCGGATATGATAAAAATTATAATATAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGACAGTTAGTGTAAAGAATCAAATAAATAGAACTAATAATGTTGATTTAGCAGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATTACTTTAGCATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAAATTTGGCAAAG 9213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAAAAAATTGACATAT 9693
                                                                                                                                                                                   GCCACTATTGAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTTAAAAATAAT
                                                                                                                                                                                                                                                                                                                         AAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCTTCGGCAACT
                                                                                                                                                                                                                                                                                                                                                                      AGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>Arararannarannararararararararararararannarnannararananarararaa</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACT
                                                                                                                                    CTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCTAATCAGGTAGAC
                                                                                                                                                                                                                                                                           GGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     892
                 밁
                                                          Ś
                                                                                                           맑
                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
```

음 성 음

B 8, B 8 B 8 B 8

밁

중 음 중

ঠ

유

8 8 8

밁

중 유

밁

á

중 음

```
JOURNAL
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 7
AG311072
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                           Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                           Local
8529 AGCCGGTGTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTC 8586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9694 CAATCAAAGAGAGAGAAAAAGGGAAAAAA
                                       and Chemical Research (RIKEN), Genomic Sciences Center (GSC);
1-7-22 Suehiro-chou, Tsurumi ku, Yokohama, Kanagawa, 230-0045, Japan (B-mail:hattori@gsc.riken.jp, URL:http://hgp.gsc.riken.go.jp/,
Tel:81-45-503-9111, Fax:81-45-503-9170)
Clones are derived from the mouse BAC library MSMg01. For BAC library availability, please contact Kuniya Abe (abe@rtc.riken.jp).
Tsukuba Institute of Physical and Chemical Research (RIKEN) 3-1-1
Koyadai, Tsukuba, 305-0074 Japan
phone: 81-298-36-9189, fax: 81-298-36-9199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             genomic constitution of strain sequence-SNP analysis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contribution of Asian mouse subspecies Mus musculus genomic constitution of strain C57BL/6J, as defined
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Abe, K., Noguchi, H., Tagawa, K., Yuzuriha, M., Ezawa, K., Saitou, N., Hattori, M., Sakaki, Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequencing : TJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (17-NOV-2003) Masahira Hattori, The Institute of Physical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 (bases 1 to 1615)
Hattori, M., Toyoda, A., Noguchi, H., Kojima, T. and Sakaki, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genome Res. 14 (12),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus molossinus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LIBRARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               e-mail: abe@rtc.riken.jp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus molossinus (Japanese wild mouse)
                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .5574823
                                                                             agtcaatgctcttgctttaaatgatacaaagaatgaagcgaatatagaatctttagcggt
                                                                                                                                                               AGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAAAAAAANNNAAAANAAAAAAAAAAAA
                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Mus musculus mu/mol_type="genomic DNA"
/sub_species="molossinus"
/db_xref="taxon:57486"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                             tissue type="mixture of kidney and spleen"/clone_Tib="MSMg01 Mouse Male BAC Library"
                                                                                                                                                                                                                                                                                                                                                                           /clone="MSMg01-093L06.TJ"
                                                                                                                                                                                                                                                                                                                                                         'sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . .1615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ECORI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                molossinus
                                                                                                                                                                                                                             1.0%;
                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2439-2447
                                                                                                                                                                                                       Score 97.4; DB 10
Pred. No. 1.1e-08;
0; Mismatches 746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         clone:MSMg01-093L06.TJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         85
                                                                                                                                                                                                                                                 DB 10;
                                                                                                                                                                                                           746;
                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                 Length 1615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Toyoda, A., Kojima, T., Moriwaki, K. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   molossinus
by BAC-end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GSS 18-DEC-2004
                                                                                                                                                                                                           4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Burvey
                                                                                                                           195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         G
```

밁

```
9605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATA 9127
AAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGGATAAATATACATGGCATTCTT
                                                                                                                                                                                           AAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAAAATGAAGTAAAATTTA
                                                                                                                                                                                                                                     GATATGATAAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGG---ATGCCA
                                                                                                                                                                                                                                                                                                                      CTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCG
                                                                                                                                                                                                                                                                                                                                                                                                        АПАЛЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАБАЛАБАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАБАЛ 1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAAAAATAATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCTTGGAAAAGGAGACGCTGCAGCTGCAATTATCGAATGTACACATTTCCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ANATGTTGATGTANATANTGTGATTANGANANATGTAG-ANGCCANANTCGGANGACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAA 8828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTAGATGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1215
                                                                                                                                                   1275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              615
```

밁

중 유

유

Ś

유 성 유

S

음 성

음 성

밁

중 음

유

8 8 8 8

á

8 8 8 8 8 8 8

문

```
JOURNAL
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 8
AJ592058/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
SOURCE
                            S
                                                                               밁
                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                   밁
                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 504; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission

AL Submitted (23-0CT-2003) Balzergue S., UMRGV, INRA/CNRS, 2 rue Gaston Cremieux, 91057 Evry cedex, FRANCE PCR was performed on DNA from transformants of Arabidopsis thaliana plants from INRA (Versailles). The DNA fragment(s) resulting from the PCR were directly sequenced from the left or the right border to determine the genomic sequence flanking the insertion. TONA derived sequences were removed. Information to order the corresponding mutant line and a link to a database providing a graphical display of the insertion site are available at http://dbsgap.versailles.inra.fr/publiclines/. This sequence has been generated in the framework of the French plant genomics program 'Genoplante' (http://www.genoplante.com and http://genoplante-info.infoblogen.fr).

S http://genoplante-info.infoblogen.fr).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AJ592058.1 GI:37941682
GSS; right border; T-DNA flanking
Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AJ592056 1434 bp DNA li
Arabidopsis thaliana T-DNA flanking sequence,
602D05, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Brunaud, V., Balzergue, S., Dubreucq, B., Aubourg, S., Chauvin, S., Bechrold, N., Cruaud, C., DeRose, R., Pell Lepiniec, L., Caboche, M. and Lecharny, A. T-DNA integration into the Arabidopsis genome dependence of pre-insertion sites EMBO Rep. 3 (12), 1152-1157 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Balzergue, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12446565
                                     TGCACAAGGAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAA
                                                                                                                                                                                                             AAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATTTCAGAAGTCAATGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGAAAAAGCATACAAAAAATTGACATATCAATCAAAGAGAGGGAGAAAAAGGGAAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGTGCA
                                                                                                                                                                   (bases 1 to 1434)
                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                        /clone lib="Arabidopsis tl
/ecotype="Wassilewskija"
l. .1434
/note="T-DNA flanking sequright border"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Arabidopsis thaliana"
/mol_type="genomic DNA"
/db_xref="taxon:3702"
                                                                                                                                                                                                                                                                      1.0%;
                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                        Score 97.2; DB 10;
Pred. No. 1.2e-08;
                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                              thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                T-DNA insertion lines"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
ce, right
                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      depends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pelletier,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Samson, F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSS 15-JAN-2004
border, clone
                                                                                                                                                                                                                                                    ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      on sequences
                                                                                                                                                                                                                                                    Gaps
                                       8600
                                                                                 1256
                                                                                                                         8540
                                                                                                                                                                   1316
```

```
1015
AAAATTGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAA 9723
                                                                                                                                                                                                                                                                                                                                                                                                             TACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGG
                                                                   TAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAAGCATACAA
                                                                                                                                   ATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATC
                                                                                                                                                                                                                                                                               TTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAATAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGACGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGCGGAACCAAAGGAGGTCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAA
                                  АЛАЛАЛАЛАЙ ВАЛАЛАЛАЛАЛАЙЙАЙ ВАЛАЙЛАЛАЛАЛИЙ ВЕВЕТИЛАЛАЛАЛАЛАЛАЛА
                                                                                                                                                                                                                                              TTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAA
                                                                                                                                                                                                                                                                                                                                                                                       AAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCTTCGGCAACTGCCACTATTGAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 9
AG386893/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
                                                   밁
                                                                                  á
                                                                                                                        밁
                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                           Matches 500;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Vector
R.Site
R.Site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LIBRARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15574823
```

S

8 8 8 8 8 8 8 8 8 8 8 8 8

음 성 음

Ś

음 성 음 성 음

8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (17-NOV-2003) Masahira Hattori, The Institute of Physical and Chemical Research (RIKEN), Genomic Sciences Center (SSC); and Chemical Research (RIKEN), Genomic Sciences Center (SSC); 1-7-22 Suechiro-chou, Tsurumi-ku, Yokohama, Kanagawa, 230-0045, Japan (B-mail:hattori@gsc.riken.jp, URL:http://hgp.gsc.riken.go.jp/, Tel:81-45-503-9111, Fax:81-45-503-9170)

Clones are derived from the mouse BAC library MSMg01. For BAC library availability, please contact Kuniya Abe (abb@rtc.riken.jp). Tsukuba Institute, physical and Chemical Research (RIKEN) 3-1-1 Koyadai, Tsukuba, 305-0074 Japan phone: 81-298-36-9189, fax: 81-298-36-9199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus molossinus
Mus musculus molossinus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutherla; Euarchontoglires; Glires; Rodentia;
Mammalla; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequencing : TJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 (bases 1 to 1519)
Hattori,M., Toyoda,A., Noguchi,H., Kojima,T. and Sakaki,Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        genomic constitution of strain C57BL/
sequence-SNP analysis
Genome Res. 14 (12), 2439-2447 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contribution of Asian mouse subspecies Mus musculus molossinus genomic constitution of strain C57BL/6J, as defined by BAC-end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Abe, K., Noguchi, H., Tagawa, K., Yuzuriha, M., Toyoda, A., Kojima, T., Ezawa, K., Saitou, N., Hattori, M., Sakaki, Y., Moriwaki, K. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    e-mail: abe@rtc.riken.jp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Shiroishi,T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AG386893
AG386893.1
ACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTAT
                                                                                                                                                                                                                                        AAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATA
                                                                                  /organism="Mus musculus mo/mol_type="genomic DNA"
/sub_species="molossinus"
/db_xref="taxon:57486"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                          tissue type="mixture of kidney and spleen'/clone_Tib="MSMg01 Mouse Male BAC Library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      clone="MSMg01-201E07.TJ"
                                                                                                                                                                                                                                                                                                                    1.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pBACe3.6
ECORI
ECORI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   molossinus
                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                    Score 96.8; DB 10;
Pred. No. 1.4e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1519
DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bp DNA linear GSS 21-DEC-2004 clone:MSMg01-201E07.TJ, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              molossinus"
                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                            o
;-
                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                         1453
                                                                                                                                                                                                                                        8494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ូ
                                                                                                                                                                                                                                                                                         0
```

밁

중 유

Ş

밁

á

```
1212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        972
                                                                                                                                                                                                                                                                                                                                                                                                                                   TTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTATAATATAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTGATTA 9034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTA 8854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTATACGGATAAATATACATGGCATTCTTCTGAAAAAAGCATACAAAAAATTGACATATC
                                                                                       CCACTATTGAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTTAAAAATAATC
                                                                                                                                                                                                                                                                                                                                      AGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTG
                                                                                                                                                                                                                                                                                                                                                                                      CGACAGTTAGTGTAAAGAATCAAATAAATAGAACTAATAATGTTGATTTAGCAGGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATTACTTTAGCATCAA 9274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAATTTTGGCAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAAACAAG 9094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGAA 8914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTG 8674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGCAAGATTGGAAGGGAAAGCTAATAAAAAAAACGTCGGTAGGATCTAATCAGGTAGACT
                                                                                                                                                                                                                                                                                      1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 1093
```

유 성

Ś

Ş

TGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAA 8660

중 유

문

5 B 5

성 유

9 9 9 9 9 9 9 9

밁

8 8 8

ક

밁

ঠ

밁

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 10
DR124185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   음 성
                                          S
                                                                                         밁
                                                                                                                                 S
  문
                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                           Matches 549;
                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Richards, S., Liu, Y., Bettencourt, B.R., Hradecky, P., Letovsky, S., Nielsen, R., Thornton, K., Hubisz, M.J., Chen, R., Meisel, R.P., Couronne, O., Hua, S., Smith, M.A., Zhang, P., Liu, J., Bussemsker, H.J., van Battenburg, M.F., Howells, S.L., Scherer, S.E., Sodergren, E., van Battenburg, M.F., Howells, S.L., Scherer, S.E., Sodergren, E., Matthews, B.B., Crosby, M.A., Schroeder, A.J., Ortiz-Barrientos, D., Rives, C.M., Metzker, M.L., Muzny, D.M., Scott, G., Steffen, D., Wheeler, D.A., Worley, K.C., Havlak, P., Durbin, K.J., Bgan, A., Gill, R., Hume, J., Morgan, M.B., Miner, G., Hamilton, C., Huang, Y., Waldron, L., Verduzco, D., Clerc-Blankenburg, K.P., Dubchak, I., Noor, M.A., Anderson, W., White, R.P., Clark, A.G., Schaeffer, S.W., Gelbart, W., Weinscock, G.M. and Gibbs, R.A.
Comparative genome sequencing of Drosophila pseudoobscura: chromosomal, gene, and cis-element evolution
                                                                                                                                                                                                                            8421 AAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DR124185
49179719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neopteara; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophila.

1 (bases 1 to 1691)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: stephenr@bcm.tmc.edu
NCBI Trace Archive: 226706818
Insert Length: 1750 Std Erro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human Genome Sequencing Cer
Baylor College of Medicine
One Baylor Plaza, Houston,
Tel: 713-798-6667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pseudoobscura
DR124185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Stephen Richards
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15632085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila pseudoobscura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DR124185.1 GI:67840883
TGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAA 8600
                                                                                                                                     TGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGTGCA
                                                                                                                                                                                    AATCAAAGAGAGAGAAAAAAGGGAAAAAA 9723
                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1691 bp mRNA lir
Drosophila pseudoobscura embryonic c
scura cDNA clone M7 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                     /note="Vector: pOTB7; Site 1: EcoRI; Site 2: XhoI; oligo dt priming from poly A+ RNĀ, directionally cloned"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Drosophila
/mol_type="mRNA"
/db_xref="taxon:7237"
                                                                                                                                                                                                                                                                                                                                                                                                                                      library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ngth: 1750 Std Error:
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                         /dev_stage="0-18h embryos"
/clone_lib="Drosophila pseudoobscura embryonic cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pseudoobscura
                                                                                                                                                                                                                                                                                              1.0%;
                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                       Score 96.6; DB 8;
Pred. No. 1.6e-08;
0; Mismatches 754;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TX 77030,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pseudoobscura"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                      Length 1691;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear EST 15-JUN-2005
cDNA library Drosophila
                                                                                                                                                                                                                                                                           0
                                                                                                                                          8540
       543
                                                                                             483
                                                                                                                                                                                                                                 8480
```

Graves, T.,

```
9681
                                                                                                                                                                                                                                                                                                                                                                                                                    1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8961 TGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAAATTGGTATTGGAAATGTTGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGAAAGAATGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGA
AAAATTGACATATCAATCAAAGAGAGAGAGAAAAAGGGGAAAAAAA
                                                                                                                                                                                                                                                                                                       TTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATATAT 9260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGG 9140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAAC 9080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAAC 8780
                                                      ATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATC
                                                                                                                                                                                                                                                                      TTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                  AGACGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCCGCTTGAAAATTATAC 8720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAA
                                                                                                                         TGCTTCGGCAACTGCCACTATTGAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1263
                                                                                        9680
                                                                                                                           1563
                                                                                                                                                                                                                                                                      1443
                                                                                                                                                                                                                                                                                                                                             1383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      663
                                                        1623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 11
CL118787
LOCUS
                                                                                                                                                           밁
                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                            δ
                                                                                        문
                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 558;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 1.0%;
Best Local Similarity 42.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8482 GCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Insert Length: 75000 Std Error: 0
Seg primer: T7 TAATACGACTCACTATAGGG
Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 2001)
Kremitzki,C., Carter,J., McPherson,J., Warren,W., Mardis,E. and Wilson,R.
A physical map of the xenopus tropicalis genome Unpublished (2003)
Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            High quality sequence start: 384
High quality sequence stop: 783.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: submissions@watson.wustl.edu
Insert Length: 75000 Std Error: 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genome Sequencing Center
Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
Xenopodinae; Xenopus; Silurana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Xenopus tropicalis
Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                genomic survey sequence.
CL118787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CL118787.1 GI:40612422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ISB1-72M23_T7.2 ISB1 Xenopus
                                                                                                                                                             ATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTC
                                                                                                                  AAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACG
                                                                                                                                                                                               GTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACA
                                                                                                                                                                                                                                  GGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTTGGCTAAAAATGAAAATTATGGAAAT
                                                                                                                                                                                                                                                                                                         GCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAAAAAAAAAAAAAAANANNNNNNAAAAGAAAACCTTTATAAAGGGGGNNNNNNNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone_lib="ISB1"
/note="Vector: pBeloBAC11; ISB-1 Xenopus tropicalis
Library Segment 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Xenopus tropicalis"
/mol type="genomic DNA"
/db xref="texon:8864"
/clone="ISB1-72M23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (western clawed frog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 96.2; DB 10;
Pred. No. 2e-08;
0; Mismatches 736;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bp DNA linear GSS 05-JAN-2004
tropicalis genomic clone ISB1-72M23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0.00
```

Indels Length 2001;

11;

8541

300

Ş 밁 ş 문 ঠ 밁 S 밁 ঠ 밁 S 문 ঠ 밁 ঠ 밁 Ś 밁 8 밁 Ś В ঠ 뭐 ঠ 밁 ঠ 밁 ঠ 문 S 밁 ð 밁 ঠ 밁

8641

540

8781

480

8721

420

```
RESULT 12
CL066420
LOCUS
                                   KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                         ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                    र्
                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                  र्
                                                                                                                                                                                                                                                                                                                                                            र्
                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                    र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                          DEFINITION
                                                                                                                                                                            ঠ
                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                      ORGANISM
                                                                                                                                                                                                        1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              781
                                                     CL066420 DNA CH216-108P4 Sp6.1 CH216 Xenopus tropicalis CH216-108P4, genomic survey sequence. CL066420 CL066420.1 GI:40522333
Xenopus tropicalis (western clawed frog)
Xenopus tropicalis
Eukaryota, Metazoa; Chordata, Craniata, Vertebrata, Euteleostomi,
Amphibia, Batrachia, Anura, Mesobatrachia, Pipoidea, Pipidae;
                                              GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                       TTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATTGACATATCAATCAAAGAGAGAGAAAAAGGGAAAAATGA
                                                                                                                                                                                                        <u> АААААЛАНТАА-----АЛАЛАААААЛАGAAAGAAAHTAAЛAAAAAAAAAAAAGAGAA 1369</u>
                                                                                                                                                                                                                                                                     TTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCT
                                                                                                                                                                                                                                                                                               TATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCT
                                                                                                                                                                                                                                                                                                                                                                                      ACTITAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAAAAAAAAATAAGAAAAAAAAACATAATAAAAAAGAAAAAAAGAAAATAATAAAAAA 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGA 9141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAAA
                                                                                                                                                                                                                                                                                                                    GCTTCGGCAACTGCCACTATTGAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAAAGAAAATAAAAAAAAAAAGAAATAGAAGAAAAAATAAAAACAAAATAGAAAAA----
                                                                                         genomic clone
                                                                                                    linear
                                                                                                                                                             1474
                                                                                                                                                                                  9726
                                                                                                    GSS 31-DEC-2003
                                                                                                                                                                                                        1429
                                                                                                                                                                                                                                                                                               1315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9081
                                                                                                                                                                                                                                                                                                                     9561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                    ð
                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                          문
                              S
                                                        밁
                                                                           δ
                                                                                                   밁
                                                                                                                     S
                                                                                                                                                밁
                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 555; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                              8421
                                                                                                                                                                                                                                                                                                                                                     8541
                                                                                                                                                                                            471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Class: BAC ends
```

```
Genome Sequencing Center
Washington University School of Medicine
Email: submissions@watson.wustl.edu
Insert Length: 175000 Std Error: 0.00
Seq primer: Sp6 ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Xenopodinae, Xenopus; Silurana.

1 (bases 1 to 1547)
Kremitzki,C., Carter,J., McPherson,J., Wandis,E. and Wilson,R.

A physical map of the xenopus tropicalis
Unpublished (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                High quality sequence start: 909
High quality sequence stop: 1073
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                     AAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATTTCAGAAGTCAATGCTCT
TGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGT
                                                                                                                                           CGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGA 8900
                                                                                                                                                                                                                    GATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGT
                                                                                                                                                                                                                                                                                        AAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAAC
                                                                                                                                                                                                                                                                                                                               TGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAA 8660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGTGCA
                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /sex="male"
/cell line="Stock 248 F7A2,
/clone lib="CH216"
/note="Vector: pTARBAC2.1; (
BAC library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Xenopus tropicalis"
/mol type="genomic DNA"
/strain="Nigerian frog"
/db_xref="taxon:8364"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .1547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           clone="CH216-108P4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 95.4; DB 10;
Pred. No. 2.8e-08;
0; Mismatches 749;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHORI - 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           inbred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Warren, W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Xenopus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Graves,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                     710
                                                                                                             650
                                                                         9960
                                                                                                                                                                                                                                                                                            8780
                                                                                                                                                                                                                                                                                                                               470
                                                                                                                                                                                                                                                                                                                                                                   8720
                                                                                                                                                                                                                                                                                                                                                                                                     410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8480
                                                                                                                                                                                                                        8840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۲
```

N

```
RESULT 13
CL081992
LOCUS
                                                                                                                                                                                KEYWORDS
SOURCE
ORGANISM
                                                                 JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                         음 성
                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                 REFERENCE
                                                                                           TITLE
                                                                                                                   AUTHORS
                                                           Xenopus tropicalis (western clawed frog)

Xenopus tropicalis

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute

Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipoidea; Yenopodinae; Xenopus; Silurana.

E 1 (bases 1 to 1784)

S Kremitzki,C., Carter,J., McPherson,J., Warren,W., Graves

Mardis,E. and Wilson,R.

A physical map of the xenopus tropicalis genome

Unpublished (2003)

Contact: Richard K Wilson

Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 831
                                                                                                                                                                                                        CLO81992 DNA CH216-165M9 RM4.1 CH216 Xenopus tropicalis CH216-165M9, genomic survey sequence. CLO81992 CLO81992.1 GI:40537905 GSS.
Email: submissions@watson.wustl.edu
Insert Length: 175000 Std Error: 0.00
Seq primer: RM4 ctcaagggcatcggtcgagc
                                     Genome Sequencing Center
Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                        AAAATTGACATATCAATCAAAGAGAGAGAGAAAAAGGGAAAAAATGA 9726
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATC
                                                                                                                                                                                                                                                                                                                                                                                          TAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATTAACCAAAAAATTCAAAAAATATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAAC
                                                                                                                                                                                                                                                                                                                                       TGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGACGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u> ААРАНАРАGAPAAAAAAAAAGAPAAAAAAAAAAAAAAAAAAAGAPAAAGAPAAAAAG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 genomic
                                                                                                                                                                                                                                                                       linear
                                                                                                                  Graves, T.
                                                                                                                                                                                                                                                             clone
                                                                                                                                                      Euteleostomi; 
; Pipidae;
                                                                                                                                                                                                                                                                       GSS 31-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1130
                                                                                                                                                                                                                                                                                                                                                                                          1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1250
                                                                                                                                                                                                                                                                                                                                                                                                                                             1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   830
                                5
                                                               멂
                                                                                   δ
                                                                                                               밁
                                                                                                                                     S
                                                                                                                                                                  문
                                                                                                                                                                                     5
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                        닭
                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8544 ACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Class: BAC ends
High quality seq
High quality seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
             AAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAA-ACAAAATCATCCATTGAAG
                                                                                                                                                                                                                                                                                                                                                AGGAAACGTATCTCAACTTCGTGCAAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGT
                                     CTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTG
                                                                                       ATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATTA
                                                                                                               ACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAA
                                                                                                                                                                 CTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAG
                                                                                                                                                                                                                    ataatgtgattaagaaaatgtagaagccaaaatcggaagacatgctattgtagaaacta
                                                                                                                                                                                                                                                                       TAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAA
                                                                                                                                                                                                                                                                                                                         TGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.0%;
nilarity 43.6%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  quality sequence start:
quality sequence stop: '
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cell_line="Stock 248 F7A2,
/clone_lib="CH216"
/note="Vector: pTARBAC2.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /strain="Nigerian frog"
/db_xref="taxon:8364"
/clone="CH216-165M9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _mol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          organism="Xenopus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _type="genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 95.2; DB 10;
Pred. No. 3.1e-08;
0; Mismatches 664;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tropicalis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHORI-216 Xenopus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                inbred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tropicalis
                                                               1021
                                                                                                                                         9202
                                                                                                                                                                                           9142
                                                                                                                                                                                                                                                                                              9022
                                                                                                                                                                                                                                                                                                                                                    8962
                                                                                                                                                                                                                                                                                                                                                                                                     8902
                                                                                                                                                                                                                                                                                                                                                                                                                                                        8843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8603
                                                                                                               961
                                                                                                                                                                  901
                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                    841
                                                                                                                                                                                                                                              9082
                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
```

```
JOURNAL
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
DR145459
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ક
                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
                                                                                                                                                                                                                                                                                  TITLE
                                                                               source
                                                                                                                                                                                                                                           Richards, S., Liu, Y.,
Nielsen, R., Thornton, K., Hubisz, M.J., Chen, R., Meisel, R.P.,
Couronne, O., Hua, S., Smith, M.A., Zhang, P., Liu, J., Bussemaker, H.J.,
van Batenburg, M.F., Howells, S.L., Scherer, S.E., Sodergren, R.,
Matthews, B.B., Crosby, M.A., Schroeder, A.J., Ortiz-Barrientos, D.,
Rives, C.M., Metzker, M.L., Muzny, D.M., Scott, G., Steffen, D.,
Wheeler, D.A., Worley, K.C., Havlak, P., Durbin, K.J., Egan, A.,
Gill, R., Hume, J., Morgan, M.B., Miner, G., Hamilton, C., Huang, Y.,
Waldron, L., Verduzco, D., Clerc-Blankenburg, K.P., Dubchak, I.,
Noor, M.A., Anderson, W., White, K.P., Clark, A.G., Schaeffer, S.W.,
Gelbart, W., Weinstock, G.M. and Gibbs, R.A.
Comparative genome sequencing of Drosophila pseudoobscura:
chromosomal, gene, and cis-element evolution
AL Genome Res. 15 (1), 1-18 (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1322
                                                                                                                                                       Contact: Stephen Richards
Human Genome Sequencing Center
Baylor College of Medicine
One Baylor Plaza, Houston, TX 77030,
Tel: 713-798-6667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila pseudoobscura
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Meoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pseudoobscura
DR145459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DR145459
1721 bp mRNA linear EST 16-JUN-2005
49056454 Drosophila pseudoobscura embryonic cDNA library Drosophila
pseudoobscura cDNA clone A9 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST
                                                                                                           NCBI Trace Archive: 226693903
Insert Length: 1750 Std Err
                                                                                                                                       Email: stephenr@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila pseudoobscura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DR145459.1 GI:67890549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAATTGACATATCAATCAAAGAGAGAGAAAAAGGGAAAAA 9722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTTCGGCAACTGCCACTATTGAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to
              /organism="Drosophila pseudoobscura"
|mol type="mRNA"
|db xref="teavon:7237"
|clone="A9"
                                                                                         Location/Qualifiers
/dev_stage="0-18h embryos"
                                                                                                           Std Error:
                                                                                                        0
                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                     S
                                                          밁
                                                                                         S
                                                                                                                        밁
                                                                                                                                                S
                                                                                                                                                                                      밁
                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 550;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8613
                                                                                                                                                                                                                                                                                  9033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  თ
 Conservative
```

/note="Vector: pOTB7; Site_1: EcoRI; Site_2: XhoI; oligo dt priming from poly A+ RNĀ, directionally cloned" /clone_lib="Drosophila pseudoobscura embryonic cDNA library"

1.0%; Score 95; DB 8; Pred. No. 3.4e-08; Mismatches 803; Length 1721 8433 1

8434 GAAAATAATGATTACACAAAAAATATATTTC-AGAAGTCAATGCTCTTGCTTTAAATGA 8374 AATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTAT AAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGT NAAAATTTNANNAAANNAAAAAAAAANNTTCGAAAAAAGAAAGGNNNNCCNAAAAAAAA AAAANNNCAAAAAAAAAAAAAAAAAAAAACNCCNCCNCNAGNNCACGAAACCCCTCTNNAT TGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTAC ATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAAC 365 8732 305 8672 8612 8492 125 65

AGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGA 8792 425

TATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAG TAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGG 8912 485 8852

8972

508

545

AGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTGAT 665 9032

TAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACA 9092

AGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAAGGAGACGCTGCAGC 9152 725

TGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAATTTTGGCAAA 785

```
JOURNAL
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
AG332292/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1326 AAAAAAANAAAAAAAAAAAAAAAAAAAAAAAAAA 1359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence.
AG332292.1 GI:47905602
AG332292.1 GI:47905602
GSS.
Mus musculus molossinus (Japanese wild mouse)
Mus musculus molossinus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
Mammalia; Lutinania Mirinae; Mus.
Vector
R.Site 1
R.Site 2
                                                                                                        Submitted (17-NOV-2003) Massahira Hattori, The Institute of Physical and Chemical Research (RIKEN), Genomic Sciences Center (GSC); and Chemical Research (RIKEN), Genomic Sciences Center (GSC); 1-7-22 Suechiro-chou, Tsurumi-ku, Yokohama, Kanagawa, 230-0045, Japan (B-mail:hattori@gsc.riken.jp, URL:http://hgp.gsc.riken.go.jp/, Tel:81-45-503-9111, Fax:81-45-503-9170)

Clones are derived from the mouse BAC library MSMg01. For BAC library availability, please contact Kuniya Abe (abe@rtc.riken.jp). Tsukuba Institute, Bio Resource Center, The Institute of Physical and Chemical Research (RIKEN) 3-1-1 Koyadai, Tsukuba, 305-0074 Japan phone: 81-298-36-9189, fax: 81-298-36-9199
                                                                                                                                                                                                                                                                                                                                                                                                                                           Abe, K., No
Ezawa, K.,
                                                                                                                                                                                                                                                                                                                                                                         Shiroishi,T.
Contribution of Asian mouse subspecies Mus genomic constitution of strain C57BL/6J, as sequence-SNP analysis
                                                                                                                                                                                                                                                                                           Hattori,M., Toyoda,A., Noguchi,H., Kojima,T. and Sakaki,Y. Direct Submission
                                                                Sequencing :
                                                                                              e-mail: abe@rtc.riken.jp
                                                                                                                                                                                                                                                                                                                                                          Genome Res. 14 (12), 2439-2447 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus molossinus
                                                  LIBRARY
                                                                                  PRIMERS
                                                                                                                                                                                                                                                                                                                                            5574823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCAATCAAAGAGAGAGAAAAAAGGGAAAAAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCTTCGGCAAC 9512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCGACAGTTAGTGTAAAGAATCAAATAAATAGAACTAATAATGTTGATTTAGCAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAAAAAATTGACATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCCACTATTGAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTTAAAAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTATAATATAAG 9452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   АЛЛАЙАЛАЛЛАЛАЛЛАЙЛАЙАЛАЛЛАЙАЙЛАЙЛАЙЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАДАЛА
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAACGTCGGTAGGATCTAATCAGGTAGA
                                                                                                                                                                                                                                                                                                                           (bases 1 to 1482)
                                                                                                                                                                                                                                                                                                                                                                                                                                        Noguchi,H., Tagawa,K., Yuzuriha,M.,
Saitou,N., Hattori,M., Sakaki,Y.,
: pBACe3.6
: EcoRI
: EcoRI.
                                                                 김
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1482
DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bp DNA linear (
clone:MSMg01-122G19.TJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9726
                                                                                                                                                                                                                                                                                                                                                                                            as
                                                                                                                                                                                                                                                                                                                                                                                          musculus
as defined
                                                                                                                                                                                                                                                                                                                                                                                                                                         Toyoda, A., Koji
Moriwaki, K. and
                                                                                                                                                                                                                                                                                                                                                                                        molossinus
by BAC-end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSS 18-DEC-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kojima, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9392
                                                                                                                                                                                                                                                                                                                                                                                                           ដ
                            밁
                                                            S
                                                                                            밁
                                                                                                                      Ś
                                                                                                                                                           밁
                                                                                                                                                                                        Ş
                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 434;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bource
 9481 GCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAA 9540
                                                                                                                                                                                                                                                                                                                                                                                                                                                         9061 AGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8641 AAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACA
                                                                                                                                                                                                                                                                                                                        TCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAA
                                                                                                                         AATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTA
                                                                                                                                                                                                                                                          AAAAATTCAAAAAATAATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCAT
                                                                                                                                                                                                                                                                                                                                                                                        GTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATT
                                TATGCCGGATATGATAAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGAT
                                                                                                                                                             GGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA
                                                                                                                                                                                                                                                                                           GGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAAATACAATTTCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="mixture of kidney
/clone_lib="MSMg01 Mouse Male BA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism="Mus musculus/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 species="molossinus"/db_xref="taxon:57486"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  clone="MSMg01-122G19.TJ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 93.8; DB 10
Pred. No. 5.8e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 molossinus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   649;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ey and spleen"
BAC Library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1482;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                             9420
                                                                                                                                                                                                                                                           9300
                                                                                                                                                                                                                                                                                                                          9240
                                                                                                                                                                                                                                                                                                                                                          848
                                                                                                                                                                                                                                                                                                                                                                                          9180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8700
                                                                                              809
                                                                                                                                                             899
                                                                                                                                                                                                                                                                                           788
                                                                                                                                                                                                                                                                                                                                                                                                                                                          9120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9060
                                                                                                                                                                                                                           728
                                                                                                                                                                                                                                                                                                                                                                                                                          806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
RESULT 16
CL499036
   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                밁
                                                        ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                         Query Match
Best Local Similarity
Matches 487; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PUBMED
                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            547
                                54
                                                                                                                                                                                                                                                                                                         12468722
COntact: Sessions A
Applied Trait Genetics
Syngenta Biotechnology Inc.
Syngenta Biotechnology Inc.
Syngenta Biotechnology Inc.
Syngenta Biotechnology Inc.
Back Cornwallis Rd., Research Triangle Park, NC 27709, USA
Email: allen.sessions@syngenta.com
ABRC Stock Number CS82883; T-DNA left border flanking sequences o
Syngenta Arabidopsis Insertion Library (SAIL) lines are available
through the Arabidopsis Biological Resource Center (ABRC).
Sequences represent a pool of amplified genomic regions and not
single contiguous sequences.
Class: TDNA tagged.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sessions, A., Burke, E., Presting, G., Aux, G., McElver, J., Patl Dietrich, B., Ho, P., Bacwaden, J., Ko, C., Clarke, J.D., Cotton Bullis, D., Snell, J., Miguel, T., Hutchison, Mimmerly, B., Mitzel, T., Katagiri, F., Glazebrook, J., Law, M. and Goff, S.A. A high-throughput Arabidopsis reverse genetics system Plant Cell 14 (12), 2985-2994 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
Arabidopsis thaliana
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; eudicotyledons;
Spermatophyta; Magnollophyta; Brassicaceae; Arabidopsis,
rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CL499036 linear GSAIL 662 F12.v3 SAIL Collection Arabidopsis thaliana SAIL 662 F12.v3, genomic survey sequence. CL499036 GSS. GI:45995368 GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGCTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCG
                                                           GTTTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAA 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAAT 9600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 1416)
                                                                                         1.0%;
llarity 37.1%;
Conservative
                                                                                                                                                              /db_xref="taxon:3702"
/clone="SAIL 662 P12.v3"
/clone_1ib="SAIL Collection"
/note="T-DNA left border sequences
modified TAIL-PCR strategy"
                                                                                                                                                                                                                                       /organism="Arabidopsis thaliana"
/mol_type="genomic DNA"
/ecotype="Columbia"
                                                                                                                                                                                                                                                                                                  Locat:
                                                                                                                                                                                                                                                                                                  ion/Qualifiers
                                                                                         0
                                                                                       Score 93.2; DB 10;
Pred. No. 7.6e-08;
0; Mismatches 813;
                                                                                         Indels
                                                                                                                    Length
                                                                                                                                                                                were
                                                                                                                                                                                isolated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GSS 01-APR-2004
a genomic clone
                                                                                         12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cotton, D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Patton, D.,
                                                                                       Gaps
                                                                                                                                                                               using
                                                          8473
   8533
                              113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            488
                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                        O.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                            문
                                                                     Ś
                                                                                                     밁
                                                                                                                                á
                                                                                                                                                            밁
                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                               1013
                                                                                                                                                                                                                                                                                                                                                                        9183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8594
594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  174
                                                                                                                                                                                                                                                                                                                                             834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         654
                                              AAANAAANNATAAA TANGNNNNNNAAATAATAANNANNAAAANTAAA TTAGAATAAAAAA
                                                                                                                                                                 TAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCCGGATATGATAAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGC
                                                                                                                                                                                            TAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATA
                                                                                                                                                                                                                           GGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATAAA
                                                                                                                                                                                                                                                                                    AAATTCAAAAATAATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGG
                                                                                                                                                                                                                                                                                                                                             CAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAA
                                                                                                                                                                                                                                                                                                                                                                                                       AAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCA-----TTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAA
                                                                                                                                                                  1072
                                                                                                                                                                                              9422
                                                                                                                                                                                                                           1012
                                                                                                                                                                                                                                                        9362
                                                                                                                                                                                                                                                                                                                 9302
                                                                                                                                                                                                                                                                                                                                                                          9242
                                                                                                                                                                                                                                                                                                                                                                                                                                   9182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8653
                                                                                                                                                                                                                                                                                  952
                                                                                                                                                                                                                                                                                                                                             893
                                                                                                                                                                                                                                                                                                                                                                                                       833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            173
```

```
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 17
CG748014
                                                                                                                     Ş
                                                                                                                                                   밁
                                                                                                                                                                        á
                                                                                                                                                                                                   밁
                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
  밁
                   S
                                                  밁
                                                                       Ş
                                                                                                   뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
PUBMED
                                                                                                                                                                                                                                                  Query Match 1.0%;
Best Local Similarity 37.7%;
Matches 491; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1193
                        8661 TGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATAC
 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genomic survey sequence
CG748014
CG748014.1 GI:37968940
GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Evolutionary Biology
Max-Planck-Institute for Developmental Biology
Spemannstr. 37-39, Tuebingen D-72076, Germany
Tel: '00497071601371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Srinivasan, J., Sinz, W., Jesse, T., Wiggers-Perebolte, L., Buntjer, J., van der Meulen, M. and Sommer, R.J. An integrated physical and genetic map of the nematode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pristionchus pacificus
Eukaryota; Metazoa; Nematoda; Chromadorea;
Neodiplogasteridae; Pristionchus
1 (bases 1 to 1531)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CG748014 1531 bp DNA linear GSS 24-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Sommer RJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>정</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pacificus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pristionchus pacificus
                                                                                                                                                                          TGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGTGCA
                                                                                                                      TGCACAAGGAACAAACAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAA
                                                                                                                                                                                                  TGGAGGAAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAA
                                                                                                   AAAGCAAGATTATGAAAATAATGATTACACAAAAAATATATTTCAGAAGTCAATGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   00497071601498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genet. Genomics 269
                                                                                                                                                                                                                                                                                                                                                                                                                                               BAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ralf.sommer@tuebingen.mpg
                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:54126"
/clone_lib="Ppa EcoRI BAC Library"
/note="The library was generated by a partial digest
the genomic DNA with EcoRI and cloning into the BAC
                                                                                                                                                                                                                                                                                                                                                                             /organism="Pristionchus
/mol_type="genomic DNA"
/strain="California"
                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                     . .1531
                                                                                                                                                                                                                                                                                                                                                                                                                                               ends.
                                                                                                                                                                                                                                                  Score 93.2; DB 10;
Pred. No. 7.7e-08;
0; Mismatches 812;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (5), 715-722 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                      pacificus"
                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Diplogasterida;
                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                  <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pristionchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Jansen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24-OCT-2003
                                                                                                                                                                                                                                                                                                                                           e
E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1252
                          8720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9662
                                                                                                   359
                                                                                                                                                   299
                                                                                                                                                                                                   239
RESULT 18
CL110653/c
LOCUS
                                                                                                             멂
                                                                                                                                  S
                                                                                                                                                             밁
                                                                                                                                                                                S
                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8721 AAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAAC 8780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CL110653
                                                                                                                                                                                                                                                                                                                                                                                                                                          TACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGT
                                                                                                                                                                                                                                                                                       TTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAAGTCATGCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                  TACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGA
                                                              AAAATTGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAA 9723
                                                                                                              TAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAA
                                                                                                                                                               ATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAACGTCGGTAGGATC
                                                                                                                                                                                                               TGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGA
                                                                                                                                                                                                                                                                 TTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAA
                                                                                                                                                                                                                                                                                                                                                                  AAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1594
ĝ
 DNA
 linear
 GSS
 05-JAN-2004
                                                                                                                                                                                       9620
                                                                                                                                                                                                                                        9560
                                                                                                                                                                                                                                                                 1259
                                                                                                                                                                                                                                                                                                                  1199
                                                                                                                                                                                                                                                                                                                                                                                           9380
                                                                                                                                                                                                                                                                                                                                                                                                                                             9320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8960
                                                                                                                                                               1379
                                                                                                                                                                                                               1319
                                                                                                                                                                                                                                                                                                                                           9440
                                                                                                                                                                                                                                                                                                                                                                    1139
                                                                                                                                                                                                                                                                                                                                                                                                                     1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           659
```

```
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
                      á
                                                   밁
                                                                                                               밁
                                                                                                                                       Ś
                                                                                                                                                                   당
                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                       ई
                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Sim
Matches 556;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                       8897
                                                                                                                                                                                                                                                                                                                                                                 1442
                                                                                                                                                                            1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8417 TACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kremitzki,C., Carter,J., McPherson,J., Warren,W., Mardis,B. and Wilson,R.
A physical map of the xenopus tropicalis genome Unpublished (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ISB1-53P23_Sp6.1 ISB1 Xenopus tropicalis
genomic survey sequence.
CL110653
CL110653.1 GI:40604288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seq primer: Sp6 ATTTAGGTGACACTATAG
Class: BAC ends
High quality sequence start: 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: submissions@watson.wustl.edu
Insert Length: 75000 Std Error: 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genome Sequencing Center
Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
Xenopodinae; Xenopus; Silurana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xenopus tropicalis (western clawed
   AAAATAAATAAAAAAAAAAAAAAAAATAAAAAGAATAAATAAAAATAAAATAAAATAAAATAAAATAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCA 8896
                                                                                                                                           AAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTC
                                                                                                                                                                         ATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAG 8776
                                                                                                                                                                                                                                    GAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATT
                                                                                                                                                                                                                                                                                                                                 TAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTTGGCTAAAAAATGAAAATTATG 8656
                                                                                                                                                                                                                                                                                                                                                                                           TGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTG 8596
                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTG
                                                                                                              (bases 1 to 1594)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  quality sequence start: 390 quality sequence stop: 470. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone_lib="ISB1"
/note="Vector: pBeloBAC11; ISB-1 Xenopus tropicalis BAC
Library Segment 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Xenopus tropicalis"
/mol_type="genomic DNA"
/db_xref="texon:8864"
/clone="ISB1-53P23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 93; DB 10; I
Pred. No. 8.6e-08;
0; Mismatches 725;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  frog)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1594;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              genomic clone ISB1-53P23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Graves, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                    8956
                                                                                                              1150
                                                                                                                                                                                                                                                                   8716
                                                                                                                                                                                                                                                                                                                                                                                                                           1443
                                                                                                                                           8836
                                                                                                                                                                                                                                                   RESULT 19
CL118709
                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      닭
                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                      DEFINITION
   TITLE
JOURNAL
                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                           9617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1089
                                                                                                                                                                                                                                                                                                                                                                                                                                         430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         909
                                                                                                                                                                                                                                                                                                                 310
Xenopodinae; Xenopus; Silurana.

1 (bases 1 to 1654)
Kremitzki,C., Carter,J., McPherson,J.,
Mardis,E. and Wilson,R.
A physical map of the xenopus tropicali
Unpublished (2003)
                                                                                                                                                                      genomic survey sequence.
CL118709
CL118709.1 GI:40612344
                                                                                                                                                                                                                   CL118709 1654
ISB1-72I15_T7.2 ISB1 Xenopus
                                                                                                                           Xenopus tropicalis
                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
                                                                                                                                           Xenopus tropicalis (western clawed frog
                                                                                                                                                                                                                                                                                                                 AAAAAAAAAAAAAAAACACAAAAAAAAA
                                                                                                                                                                                                                                                                                                                                              ACAAAAATTGACATATCAATCAAAGAGA
                                                                                                                                                                                                                                                                                                                                                                            GATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAAGCAT 9676
                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATA 9436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATA 9256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATA 9196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTG
                 xenopus tropicalis
                                                                                                                                                                                                                    bp DNA linear GS
tropicalis genomic clone
                                                                                                                                                                                                                                                                                                                                               9705
                                               Warren, W.,
                 genome
```

551

671

9316 731

611

791

851 9136

9496

371

Graves, T.

GSS

ISB1-72I15, 05-JAN-2004

```
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 534; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8718 TACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGA
                                                                                                                                        9018
                                                                                                                                                                                                                                                579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genome Sequencing Center
Washington University School of Medicine
Email: submissions@watson.wustl.edu
Insert Length: 75000 Std Error: 0.00
Seq primer: T7 TAATACGACTCACTATAGGG
Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Richard K Wilson
 AGGAGACGCTGCAGCTGCAGTGCAATATCGAATGTACACATTTCCAATGAGATGGATAT 9197
                                                                                                                                                                                                                                              AACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ANATGGAGGANACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGC
                                                                                                     TGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGA
                                                                                                                                                                           TGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGA
                                                                                                                                                                                                                                                                                                                 TGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGT
                                  AACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                       quality sequence start: 468 quality sequence stop: 812. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone_lib="ISB1"
/note="Vector: pBeloBAC11; ISB-1 Xenopus tropicalis
Library Segment 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Xenopus tropicalis"
/mol_type="genomic DNA"
/db xref="texon:8954"
/clone="ISB1-72115"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .1654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 92.4; DB 10;
Pred. No. 1.1e-07;
0; Mismatches 772;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BAC
                                                                                                                                                                                                           9017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                158
                                                                                                                                                                                                                                                                                                                                                                                                                                                          458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               398
                                  818
                                                                                                     758
                                                                                                                                                                           869
                                                                                                                                                                                                                                                                                  8957
                                                                                                                                                                                                                                            TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 20
CL119201
                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9678 CAAAAAATTGACATATCAATCAAAGAGAGGAGAAAAAAGGGAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9198 ТАЛАЛАТТТСССАЛАССАСТАТССАТСТСТСЛАТТААТААССАЛАЛАТТСАЛАЛАТАА
                                                                                 Email: Bubmissions@watson.wustl.edu
Insert Length: 75000 Std Error: 0.0/
Seq primer: Sp6 ATTTAGGTGACACTATAG
Class: BAC ends
High quality sequence start: 233
High quality sequence stop: 402.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae; Xenopodinae; Xenopus; Silurana.

1 (bases 1 to 1256)
1 Kremitaki,C., Carter,J., McPherson,J., Warren,W., Graves,T., Mardis,E. and Wilson,R.
Mardis,E. and Wilson,R.
A physical map of the xenopus tropicalis genome Unpublished (2003)
                                                                                                                                                                                                          Genome Sequencing Center Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CL119201 1256 bp DNA ISB1 Tenopus tropicalis genomic survey sequence.
CL119201
                                                                                                                                                                                                                                              Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                       Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CL119201.1 GI:40612836
                                                                                                                                                                                                                                                                                                                                                                                                                      Xenopus tropicalis (western clawed frog)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGG 9617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCG 9557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Xenopus tropicalis"
/mol type="genomic DNA"
/db xref="reaxon:8364"
/clone="ISB1-76J12"
                                                                                                                                                                           0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             clone ISB1-76J12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1358
```

S 문 Ś 밁 Ś 밁 ş 문 S 문 5 밁 5 밁 S 밁 S 문 Ś 용 δ 밁 S 밁 δ

```
Ś
                                             밁
                                                                   Ś
                                                                                            밁
                                                                                                                                           밁
                                                                                                                                                                5
                                                                                                                                                                                                            á
                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                        ક
                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                      ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                   S
                                                                                                                 Ś
                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                       ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 441; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                9204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8544 ACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGG
                                                                                                                                                                                                                                                                                                                                                        9024 TAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8784 TGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8724 GAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGAT 8783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8664 AAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAA 8723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8604 AGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         122
                                                                                                                                                                                                                                                                                                                                    482
                                                                                                                                                                                                                                                                                                                                                                                  422
                                                                                                                                                                                                                                                                                                                                                                                                                                 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           182
  902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N
                                                                                                                                                                                                                                                                                                          TGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGA 9143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAATCATCCATTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGC
                                                                                            TTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGC
                                                                                                                                                                                         CGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAA 9203
                                                                                                                                                                                                                                                                                     AGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAA 9023
                                                                                                                                                                                                                                                                                                                                                                                                                              AGCAGGAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTA 9443
                                                                                                                  /clone_lib="ISB1"
/note="Vector: pBeloBAC11; ISB-1 Xenopus tropicalis BAC
Library Segment 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 91.8; DB 10;
Pred. No. 1.4e-07;
0; Mismatches 739;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                             901
                                                                                                                                           781
                                                                                                                                                                                                                                                                                     601
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 21
CL076558
                                                                밁
                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
밁
                       S
                                                                                                                                    밁
                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 561; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, R
Amphibia, Batrachia, Anura, Mesobatrachia, Pipoidea,
Xenopodinae, Xenopus, Silurana.
1 (bases 1 to 1485)
Kremitzki,C., Carter,J., McPherson,J., Warren,W., Gramardis,B. and Wilson,R.
A physical map of the xenopus tropicalis genome
Unpublished (2003)
Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genome Sequencing Center
Washington University School of Medicine
Email: submissions@watson.wustl.edu
Insert Length: 175000 Std Error: 0.00
Seq primer: Sp6 ATTTAGGTGACACTATAG
Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CL076558 DNA 1485 bp DNA 1
CH216-139010 Sp6.1 CH216 Xenopus tropicalis
CH216-139010, genomic survey sequence.
CL076558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Xenopus tropicalis (western clawed frog) Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CL076558.1 GI:40532471
                          TGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAA 8600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCGGCAACTGCCACTATTGAAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATT
AAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCTAA
                                                                                                                                    AAAAANAAAAAAAAAAAAAAAAAAAAAAAAAAAA 1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTGACATATCAATCAAAGAGAGAGAAAAAAGGGGAAAAAA 9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  quality sequence start: 572 quality sequence stop: 635.
                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                             /organism="Xenopus tropicalis"
/mol_type="genomic DNA"
/strain="Nigerian frog"
/db xref="taxon:8364"
/clone="CH216-139010"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                         /cell_line="Stock 248 F7A2, inbred N7"
/clone_lib="CH216"
/note="Vector: pTARBAC2.1; CHORI-216 Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                               /Bex="male"
                                                                                                                                                                                                                       0.91;
                                                                                                                                                                                                                                                                                             library"
                                                                                                                                                                                                       <u>,,</u>
                                                                                                                                                                                                       Score 91.8; DB 10;
Pred. No. 1.5e-07;
0; Mismatches 745;
                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                         Length 1485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Graves, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSS 31-DEC-2003
clone
                                                                                                                                                                                                        4
                                                                                                                                                                                                        Gaps
                                                                                                    8540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9623
                                                                  230
```

δ

```
1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        771
                                                                                                                                                                                                                                                                GATTTAGCAGGAAAAATTAAAACAGAGGGAAACA--TCAATGTATATGCCCGGATATGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAAATTCAAAAAATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAGACGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTAGATCTACAAGGAAA--AAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGT 8840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATAC 8720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCAT 9676
                                                                                                                                                                                                                                                                                                                                                                                            CAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          АЛЛАЛАЛ БАЛА БАЛА БАЛЛАЛА БАЛДАЛАЛ БАЛДАЛ БАЛ БАЛ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAAC 878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8960
                                                                                                                                                                                                                                                                                                                                                                                            1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . 8900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8660
```

음 성 음 성

S 밁 ઈ 밁 Ş 밁 र् 밁 S 밁 ঠ 밁 S 밁 ક 밁 5 ₽ S 밁 ş 밁 Ş 8 ş 밁 S 밁 S 밁

밁

```
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 22
DR125630
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                              밁
                                                                                                   S
                                                                                                                                                                                 ঠ
                     S
                                                                                                                                                밁
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                    Local
8601 TGGAGGAAACGTATCTCCAACTTCGTGCAAAAAGCTTTTGGCTAAAAAATGAAAATTATGGAAA
                                                                                                                                                                                         8481 TGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGTGCA
                                                                                                                                                                                                                                                                     8421 AAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nielsen,R., Thornton,K., Hubisz,M.J., Chen,R., Meisel,R.P., Couronne,O., Hua,S., Smith,M.A., Zhang,P., Liu,J., Bussemaker,H.J., van Batenburg,M.F., Howells,S.L., Scherer,S.E., Sodergren,E., Matthews,B.B., Crosby,M.A., Schroeder,A.J., Ortiz-Barrientos,D., Rives,C.M., Metzker,M.L., Muzny,D.M., Scott,G., Steffen,D., Rives,C.M., Worley,K.C., Havlak,P., Durbin,K.J., Egan,A., Wheeler,D.A., Wordar,M.B., Miner,G., Hamilton,C., Huang,Y., Gill,R., Hume,J., Morgan,M.B., Miner,G., Hamilton,C., Huang,Y., Waldron,L., Verduzco,D., Clerc-Blankenburg,K.P., Dubchak,I., Noor,M.A., Anderson,W., White,K.P., Clark,A.G., Schaeffer,S.W., Gelbart,W., Weinstock,G.M. and Gibbs,R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 One Baylor Plaza,
Tel: 713-798-6667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Comparative genome sequencing of Drosophila pseudoobscura: chromosomal, gene, and cis-element evolution Genome Res. 15 (1), 1-18 (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 1909)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila pseudoobscura
Drosophila pseudoobscura
Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             49096520 Drosophila pseudoobscura pseudoobscura cDNA clone O23 5', m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human Genome Sequencing Center
Baylor College of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Richards, S., Liu, Y., Bettencourt, B.R., Nielsen, R., Thornton, K., Hubisz, M.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI Trace Archive: 226697953
Insert Length: 1750 Std Error:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: stephenr@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Stephen Richards
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15632085
                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                ЛАААЛЛАÃААЛЛАÃGAÑÃAÃAЛЛÃÃАЛЛÃÃАЛЛÃАÃАÃАÃАЛААААДАААДАААЛЛААЛЛАААЛ
                                                                                                                                                                                                                                  ACAAAAAATTGACATATCAATCAAAGAGAGGGAAAAAAGGGAAAAAATGA
                                                                                                       TGCACAAGGAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 1808)
                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             organism="Drosophila
/mol_type="mRNA"
/db_xref="taxon:7237"
                                                                                                                                                                                                                                                                                                                                                                                                                 /note="Vector: pOTB7; Site_1: EcoRI; Site_2: XhoI;
it priming from poly A+ RNA, directionally cloned"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    dev_stage="0-18h embryos"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ibrary"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              clone_lib="Drosophila pseudoobscura embryonic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           clone="023"
                                                                                                                                                                                                                                                                                                                                 0.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Houston,
                                                                                                                                                                                                                                                                                                                               Score 91.8; DB 8;
Pred. No. 1.5e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1808
                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pseudoobscura"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                embryonic cDNA library Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA
                                                                                                                                                                                                                                                                                                                740;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hradecky, P., Letovsky, S.,
                                                                                                                                                                                                                                                                                                                                                     Length 1808;
                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST 15-JUN-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9726
                                                                                                                                                                                                                                                                                                                6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1420
                                                                                                       8600
                                                                                                                                                                                         8540
                         8660
                                                                                                                                                442
                                                                502
                                                                                                                                                                                                                                                                         8480
                                                                                                                                                                                                                                                                                                              Ν
```

유정

밁

8 8 8

문

```
1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8901
 1577
                                                                                                                                                                                                                                                                                                                 1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAATTGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAAA 9723
                                                                                                                                                                                                                                   TTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGC
                                                                                                                                                                                                                                                                            TTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGGATATGATAAAAA
                                                                                                                                                                                                                                                                                                                                                                                         TACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                     AAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATTAACCAAAAAATTCAAAAAAATATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATAC
TAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAA
                                                                                                    ATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATC
                                                                                                                                                       TGCTTCGGCAACTGCCACTATTGAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGA
                                                                                                                                                                                                         АЛЛАЙААЛАЛАЛААЛАЛАЛАЙАЙАЙААКБААЛАДААДАДАДАДАДАДАДАДАДАДАДАДАД
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8720
                                                  1576
                                                                                                    1516
                                                                                                                                                                                                                                                                                       9440
                                                                                                                                                                                                                                                                                                                1276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 23
CG753854/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                                                                                                                    δ
                                                                                                                                                                   밁
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                           밁
                               Ş
                                                             밁
                                                                                     S
                                                                                                               밁
                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
```

रु है रु

밁

밁

8 8 8 8 8 8 8 8 8

문

S

8 8 8 8 8 8 8

원 유

```
Query Match 0.9%;
Best Local Similarity 37.5%;
Matches 379; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Evolutionary Biology
Max-Planck-Institute for Developmental Biology
Spemannstr. 37-39, Tuebingen D-72076, Germany
Tel: 00497071601371
Fax: 00497071601498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             genomic survey sequence CG753854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CG753854 1528 bp DNA linear GSS 24-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 1528)
Srinivasan, J., Sinz, W., Jesse, T., Wiggers-Perebolte, L., Jansen, K.,
Buntjer, J., van der Meulen, M. and Sommer, R.J.
An integrated physical and genetic map of the nematode Pristionchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Sommer RJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12884007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Nematoda; Chromadorea; Diplogasterida;
Neodiplogasteridae; Pristionchus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pristionchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CG753854.1 GI:37978755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pristionchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAA 8772
GTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                             TTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGA
                                                                                                                         GTTGATGTAAATAATGTGATTAAGAAAAATGTAGAAGCCAAAATCGGAAGACATGCTATT
                                                                                                                                                                      GAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAAT
                                                                                                                                                                                                                                                         TCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTAGATGCTTTGAAT
                                                                                                                                                                                                                                                                                                                                              GGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genet. Genomics 269 (5), 715-722 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ralf.sommer@tuebingen.mpg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:54126"
/clone lib="Ppa EcoRI BAC Library"
/note="The library was generated by a partial digest
the genomic DNA with EcoRI and cloning into the BAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Pristionchus pacificus"
/mol_type="genomic DNA"
/strain="California"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    vector."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pacificus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 91.6; DB 10;
Pred. No. 1.6e-07;
0; Mismatches 632;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1528;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of
f
                                                                                                                                                                                                                                                                                                                                                                                                                                  . 1345
                                                                                                                                                                                                                                                                                                                                                                                         8892
                                          9132
                                                                                                                                                                                                              9012
                                                                                                                                                                                                                                                         1225
                                                                                                                                                                                                                                                                                                      8952
                                                                                                                                                                                                                                                                                                                                              1285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

has

```
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 24
AJ591978/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                            TITLE
                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  864
Submitted (23-OCT-2003) Balzergue S., UMRGV, INRA/CNRS, 2 rue Gaston Cremieux, 91057 Evry cedex, FRANCE
PCR was performed on DNA from transformants of Arabidopsis thaliana plants from INRA (Versailles). The DNA fragment(s) resulting from the PCR were directly sequenced from the left or the right border to determine the genomic sequence flanking the insertion. T-DNA derived sequences were removed. Information to order the corresponding mutant line and a link to a database providing a
                                                                                                                                                                                                                                                                                                                                                                Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
Arabidopsis thaliana
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons;
rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AJ591978 1453 bp DNA linear GSS 15-JAN-2004 Arabidopsis thaliana T-DNA flanking sequence, right border, clone 598D01, genomic survey sequence.
                                                                                                                                                                                                                                  of pre-insertion sites
EMBO Rep. 3 (12), 1152-1157 (2002)
                                                                                                                                                                                                                                                                                          Brunaud, V., Balzergue, S., Dubreucq, B., Aubourg Chauvin, S., Bechtold, N., Cruaud, C., DeRose, R., Lepiniec, L., Caboche, M. and Lecharny, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AJ591978
AJ591978.1 GI:37941602
GSS; right border; T-DNA flanking
                                                                                                                                                                          Balzergue, S
                                                                                                                                                                                                                  12446565
                                                                                                                                                                                                                                                                          -DNA integration into the Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATAAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCATACAAAAATTGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCCGGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATAATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATG
                                                                                                                                                                                              (bases 1 to 1453)
                                                                                                                                                          Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence
                                                                                                                                                                                                                                                                                                              Aubourg,S., Samson,F. Rose,R., Pelletier,G.,
                                                                                                                                                                                                                                                                        genome depends
                                                                                                                                                                                                                                                                                                                                Samson, F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9723
                                                                                                                                                                                                                                                                          on sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                S
                                                                                                            ş
                                                                                                                                                                                        S
                                                                                                                                                                                                                                    뭉
                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
        밁
                                                                              밁
                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                          1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8421 AAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCT
                                            9141 AGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8721 AAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAAATTGGAGATAAATTAGAAAC
        700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  494;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          graphical display of the insertion site are available at http://dbsgap.versailles.inra.fr/publiclines/. This sequence been generated in the framework of the French plant genomics program 'Genoplante' (http://www.genoplante.com and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        http://genoplante-info.infobiogen.fr).
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAA
        TACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGG
                                                                                                                                                                                            AAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAAC 9080
                                                                                                                                                                                                                                                                        TGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGT
                                                                                                                                                                                                                                                                                                                CGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.9%;
ilarity 37.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          right border"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Arabidopsis thaliana'
/mol_type="genomic DNA"
/db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="T-DNA flanking
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="Arabidopsis thaliana
/ecotype="Wassilewskija"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          clone="598D01"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 91.4; DB 10
Pred. No. 1.8e-07;
0; Mismatches 809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  809;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          T-DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          insertion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
```

8720

1181

8660 1241 8600 1301 1361

0

1121

1061

9200

641

9140

761

821

701

8960

881

8900

1001

941

밁 δ 밁 र्ठ 문 ঠ 밁 १ 밁 S 밁 5 밁 र् 밁 ঠ 밁 δ 밁 S

```
RESULT 25
CL109409
LOCUS
DEFINITION
                                                                                                                                                                                                                                            TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9681 AAAATTGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAA 9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          160
                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae; Kenopodinae; Kenopous; Silurana.

1 (bases 1 to 1829)

Kremitzki, C., Carter, J., McPherson, J., Warren, W., Graves, T., Mardis, E. and Wilson, R.

A physical map of the xenopus tropicalis genome Unpublished (2003)

Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                       ISB1-51H21_Sp6.1 ISB1 Xenopus
genomic survey sequence.
CL109409
CL109409.1 GI:40603044
GSS.
                                                                                                                                                                                  Genome Sequencing Center
Washington University School of Medicine
Email: submissions@watson.wustl.edu
Insert Length: 75000 Std Error: 0.00
                                                                                                                                                      Class: BAC ends
                                                                                                                                                                    Seq primer: Sp6 ATTTAGGTGACACTATAG
                                                                                                                                                                                Insert Length:
                                                                                                                                                                                                                                                                                                                                                                           Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CL109409
                                                                                                                                                                                                                                                                                                                                                                                           Xenopus tropicalis (western clawed frog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCTTCGGCAACTGCCACTATTGAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               quality sequence start: 856 quality sequence stop: 936. Location/Qualifiers
/organism="Xenopus tropicalis"
/mol_type="genomic DNA"
/db_xref="taxon:8364"
/clone="1581:5111"
/clone=1ib="ISB1"
/note="Vector: pBeloBAC11; ISB-1 Xenopus tropicalis BAC
                                                                                             1. .1829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                bp DNA linear GSS 05-JAN-200
tropicalis genomic clone ISB1-51H21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GSS 05-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                               밁
                                                                         Ś
                                                                                                         문
                                                                                                                                  Ś
                                                                                                                                                                 밁
                                                                                                                                                                                            Ş
                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 568; Conserv
                   9343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     acagcacaaagtaatactgaatccgtagttcgtttacgaaagcaagattatgaaaataat
                                               AAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTGTAAAGAATCAAATAAATAAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACA
                                                                                                                                                                                               ATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCA
                                                                                                                                                                                                                                                                                                                   GTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAA
                                                                                                                                                                                                                                                                                                                                                                          GGTGGCTATGGTGAATTGGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCGGAAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAAAAAGATAGAACAACCAAAAAAGAAAAAAAGCNCAGAAAAAAAAATAAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATTACACAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAAT
                                                                           TCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTT
                                                                                                         TCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATTACTTTAGCATCAAGTAGTGAA
                                                                                                                                                                                                                             GCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCA
                                                                                                                                                                                                                                                                                       GTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCC 8682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.9%;
ilarity 42.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Segment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 91.4; DB 10;
Pred. No. 1.9e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches 763;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1829;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10,
                                                                                                                                                                                                                                                                                                                                                                                                                                      8982
```

9342

9282

909

969

9222

9162

849

9102

799

9042 679

739

8922 559 8862

619

8742

8802

8622

8562

259

8502

199

```
RESULT 26
CL082000/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                  ORIGIN
                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                            Matches 626;
                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1150
  8246 AAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1030
                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 1981)
Kremitzki,C., Carter,J., McPherson,J., Warren,W.,
Mardis,E. and Wilson,R.
A physical map of the xenopus tropicalis genome
Unpublished (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CL082000 1981 bp DNA 1
CH216-165P18 RM4.1 CH216 Xenopus tropicalis
CH216-165P18, genomic survey sequence.
CL082000
                                                                                                                                                                                                                                                                                     Seq primer: RM4 ctcaagggcatcggtcgagc Class: BAC ends
                                                                                                                                                                                                                                                                                                                                        Genome Sequencing Center Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                Email: submissions@watson.wustl.edu
Insert Length: 175000 Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
Xenopodinae; Xenopus; Silurana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CL082000.1 GI:40537913
GSS.
                                                                                                                                                                                                                                                                                                                                                                        Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Xenopus tropicalis (western clawed frog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAGGAGAAAAAGGGAAAAAA 9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATT 9522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAAGAGAAAAAAAAAAAA 1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  quality sequence start: 265 quality sequence stop: 497. Location/Qualifiers
                            Conservative
                                                                                                                                                             /organism="Xenopus tropicalis"
/mol type="genomic DNA"
/strain="Nigerian frog"
/db xref="taxon:8364"
/clone="CH216-165P18"
                                                                                             /cell_line="Stock 248 F7A2, inbred N7"
/clone_lib="CH216"
/note="Vector: pTARBAC2.1; CHORI-216 Xenopus
BAC library"
                                                                                                                                                   /sex="male"
                                       0.9%;
                          <u>.</u>
                          Score 91.2; DB 10;
Pred. No. 2.1e-07;
0; Mismatches 843;
                            Indels
                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           genomic
                                                                                                                                                                                                                                                                                                                                                                                                                            Graves, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GSS 31-DEC-2003 clone
                          9:
                                                                                                          tropicalis
                          Gaps
  8305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9642
                         N
            S
                                       밁
                                                               Ś
                                                                                             밁
                                                                                                                  Ş
                                                                                                                                                밁
                                                                                                                                                                        Ş
                                                                                                                                                                                                   밁
                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                           뫄
                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                      1086
                                                                                                                                                                                                                                                                                                                1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1919
9326 GAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATAAATAGAACTAATAATGTTGATTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8786 CAAGAGATAATACGATTGTAAGAGTCAACGGAGACGAAACGAAGGAGGTCTTGTCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8606 GAAACGTATCTCCAACTTCGTGCAAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAA 8665
                                                                                                                                                                                                                              9086 GAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8666 AAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGA 8725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1859 АТАЛЛАТАЛЛАТАЛЛАТАТАЛЛАТСАТАЛАТАТАЛЛАТАЛЛАЛЛАЛАТТАЛЛАТТАЛЛАТАЛА 1800
                                       TAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCAG
                                                                                             TGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATTACTT
                                                                                                                                                                        CTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAATT
                                                                                                                                                                                                      ATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTG
                                                                                                                                                                                                                                                                                                                ATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATA
                                                                                                                                                                                                                                                                                                                                                                                           AGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ANATAAATAAATAAATAGAAAATAAAAAAAAATAAAAATAAAAGAAATAAAATAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAAATTGGAGATAAATTAGAAACGATTG 8785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAG 8605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ТАЛАЛАЛТСТТАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАТСАЛАЛСТАЛАЛТАТАТАЛАЛТАЛА 1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGC 8425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9325
                                                                                                                        9265
                                                                                                                                                                                                      1027
                                                                                                                                                                                                                                                            1087
                                                                                                                                                                                                                                                                                                               1147
                                                                                                                                                                                                                                                                                                                                                                                                                                                      8905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1440
                                         849
                                                                                                                                                                                                                                                                                                                                           9025
                                                                                                                                                                                                                                                                                                                                                                      1201
                                                                                                                                                                                                                                                                                                                                                                                                                            1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8845
                                                                                             909
                                                                                                                                                  969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1680
```

```
JOURNAL
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 27
AG346189/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                   FEATURES
                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9446 ATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCTT 9505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence.
AG346189.1 GI:47919499
AG346189.1 GI:47919499
GSS.
Mus musculus molossinus (Japanese wild mouse)
Mus musculus molossinus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
Mammalia;
                                                Vector
R.Site 1
R.Site 2
                                                                                                                                                                                       and Chemical Research (RIKEN), Genomic Sciences Center (GSC); 1-7-22 Suehiro-chou, Tsurumi-ku, Yokohama, Kanagawa, 230-0045, Japa: (B-mail:hattori@ggc.riken.jp, UML:http://bgp.gsc.riken.go.jp/, Tel:81-45-503-9111, Fax:81-45-503-9170)

Tolones are derived from the mouse BAC library MSMg01. For BAC library availability, please contact Kuniya Abe (abe@rtc.riken.jp)
Tsukuba Institude, Bio Resource Center,
The Institude, Bio Resource Center,
The Institute of Physical and Chemical Research (RIKEN) 3-1-1
KOVAGA1 Taran
                                                                                                                                                                                                                                                                                                                                                                                                                                      Abe,K., Noguchi,H., Tagawa,K., Yuzuriha,M., Toyoda,A., Kojima,7 Ezawa,K., Saltou,N., Hattori,M., Sakaki,Y., Moriwaki,K. and Shirolshi,T.

Contribution of Asian mouse subspecies Mus musculus molossinus genomic constitution of strain C57BL/6J, as defined by BAC-end
                                                                                                                                                                                                                                                                                                                    Direct Submission
Submitted (17-NOV-2003) Masahira Hattori, The Institute of Physical
                                                                                                                                                                Koyadai, Tsukuba, 305-0074 Japan
phone: 81-298-36-9189, fax: 81-298-36-9199
                                                                                                                                                                                                                                                                                                                                                                                                           Genome Res. 14 (12), 2439-2447 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AG346189
Mus musculus molossinus
                                                                                                                Sequencing :
                                                                                                                                 PRIMERS
                                                                                                                                                e-mail: abe@rtc.riken.jp
                                                                                                                                                                                                                                                                                                                                                           Hattori, M.,
                                                                                                 LIBRARY
                                                                                                                                                                                                                                                                                                                                                                                              15574823
                                                                                                                                                                                                                                                                                                                                                                                                                            sequence-SNP analysis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGGCAACTGCCACTATTGAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAAGCATACAAAAAAT 9685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCTAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAA 9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGGAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 1507)
Location/Qualifiers
1. .1507
/organism="Mus musculus molossinus"
                                                                                                                                                                                                                                                                                                                                                         Toyoda, A., Noguchi, H., Kojima, T. and Sakaki, Y.
                                                                ECORI
                                                  ECORI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1507
DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bp DNA linear G
clone:MSMg01-141E08.TJ,
                                                                                                                                                                                                                                                                                           ter (GSC);
230-0045, Japan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GSS 18-DEC-2004, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kojima, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               789
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                             밁
                                                                                                          ঠ
                                                                                                                                             밁
                                                                                                                                                                      ঠ
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 471;
                                                                                                                                                                                                                                                                                                                                                                                                           1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGG
                  AGCCAAAGCGACAGTTAGTGTAAAGAATCAAATAAATAGAACTAATAATGTTGATTTAGC
                                                                               AGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCAGG
                                                                                                                                                GGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATTACTTT
                                                                                                                                                                                                               TGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAATTT
                                                                                                                                                                                                                                                                               AAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGC
                                                                                                                                                                                                                                                                                                                                             TGTGATTAAGAAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTACAAGGAAAAGTGGTGGCTATGGTGGAATTTGGTATTTGGAAATGTTGATGTAAATAA 9026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /sub_species="molossinus"
/db_xref="taxon:57486"
/clone="MSMG01-141E08.TJ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tissue_type="mixture of kidney and spleen"
/clone_Tib="MSMg01 Mouse Male BAC Library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 90.6; DB 10;
Pred. No. 2.6e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches 766;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8906
                    602
                                                                                                                                                                                                                                                                               842
                                                                                                                                                                                                                                                                                                           9146
                                                                                                                                                                                                                                                                                                                                                                           9086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8846
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 28
AG289820/c
                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CUS
                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                Hattori, M., Toyoda, A., Noguchi, H., Kojima, T. and Sakaki, Y.

Direct Submission

Submitted (17-NOV-2003) Masahira Hattori, The Institute of Physical and Chemical Research (RIKEN), Genomic Sciences Center (SCC);

1-7-22 Suehiro-chou, Tsurumi-ku, Yokohama, Kanagawa, 230-0045, Japan (E-mail:hattori@gsc.riken.jp, URL:http://hgp.gsc.riken.go.jp/,

Tel:81-45-503-9111, Fax:81-45-503-9170)

Clones are derived from the mouse BAC library MSMg01. For BAC library availability, please contact Kuniya Abe (abe@rtc.riken.jp). Tsukuba Institute of Physical and Chemical Research (RIKEN) 3-1-1 KOyadai, Tsukuba, 305-0074 Japan phone: 81-298-36-9189, fax: 81-298-36-9199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                              Mus
Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus molossinus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence.
AG289820
AG289820.1 GI:47862697
GSS.
                                                                       Vector
R.Site
R.Site
                                                                                                              Sequencing : TJ
LIBRARY
                                                                                                                                                      e-mail: abe@rtc.riken.jp
                                                                                                                                                                                                                                                                                                                                                                                  Genome Res. 14 (12),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Abe, K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus molossinus
                                                                                                                                             PRIMERS
                                                                                                                                                                                                                                                                                                                                                                      15574823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AG289820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAA 9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAAGCATACAAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    aggaaaaattaaaacagagggaaacatcaatgtatatgccggatatgataaaaattataa
                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 1401)
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Noguchi,H., Tagawa,K., Yuzuriha,M., Toyoda,A., Koji
., Saitou,N., Hattori,M., Sakaki,Y., Moriwaki,K. and
/organism="Mus musculus molossinus"
/mol_type="genomic DNA"
/sub_species="molossinus"
                                                       Location/Qualifiers
                                                                                    : pBACe3.6
: EcoRI
                                                                        : EcoRI.
                                             .1401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       molossinus (Japanese
                                                                                                                                                                                                                                                                                                                                                                                   2439-2447 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1401
DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          bp DNA linear (
clone:MSMg01-064E24.TJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        wild
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSS 18-DEC-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kojima, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               542
                                                                                                                                                                                                                                                                                                                                                                                                                              ដ
              Ś
                                             밁
                                                                    á
                                                                                                                         S
                                                                                                                                                       밁
                                                                                                                                                                              Ś
                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멼
                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 452;
                 9541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1215
                                                                                                                                                                                                                                                                                                                                                                                                              9121
                                                                                                                                                                                 9361 AATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8641 AAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          915
                                                                                                                                                                                                                                                                                                                                                                                                                                         975
 TTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATGCTTTGAATGAAGTTGAATGTAGATCTACAAGGAAAAAAGTGGTGGCTATGGTGGAATT
                                                                                                                                                                                                                                                                                                                          GTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGG
                                             GCCAAAAGTCATGCTGCAGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAA
                                                                                                                             TATGCCGGATATGATAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGAT
                                                                                                                                                         GGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA
                                                                                                                                                                                                                                                                                               AAAAATTCAAAAAATAATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCAT
                                                                                                                                                                                                                                                                                                                                                      TCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACC
                                                                                                                                                                                                                                                                                                                                                                                  AGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGAAGCCAAAATCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0.9%;
nilarity 41.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /sex="male"
/tissue_type="mixture of kidney and spleen"
/clone_lib="MSMg01 Mouse Male BAC Library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:57486"
/clone="MSMg01-064E24.TJ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 90.2; DE
Pred. No. 3.1e-
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; DB 10;
3.1e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1401;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                 9600
                                                                                                                                                                                    9420
                                                                                                                                                                                                                                         9360
                                                                                                                                                                                                                                                                                                                            796
                                                                                                                                                                                                                                                                                                                                                      9240
                                                                                                                                                                                                                                                                                                                                                                                  856
                                                                                                                                                                                                                                                                                                                                                                                                              9180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8700
                                             496
                                                                                                                                                         616
                                                                                                                                                                                                                676
                                                                                                                                                                                                                                                                      736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8820
                                                                                                                                                                                                                                                                                                                                                                                                                                         916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 976
```

Query Match 0.9%; Score 90.2; DB 10; Length 1407; Best Local Similarity 37.5%; Pred. No. 3.1e-07; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 15, Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 15, Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 15, Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 15, Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 815; Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 15, Indels 0; Gaps 0; Matches 488; Conservative 0; Mismatches 15, Indels 15,	program 'Genoplante' (http://www.genoplante.com and http://genoplante-info.infobiogen.fr). Location/Qualifiers 1.1407 /organism="Arabidopsis thaliana" /mol type="genomic DNA" /db xref="taxon:3702" /clone="600D05" /clone="1b="Arabidopsis thaliana T-DNA insertion lines" /clone=1bb="Arabidopsis thaliana T-DNA insertion lines" /ecotype="Wassilewskija" /ecotype="Wassilewskija" /note="T-DNA flanking sequence right border"	AUTHORS Balzerque, S. AUTHORS Balzerque, S. Direct Submission TITLE Direct Submission JOURNAL Submitted (23-OCT-2003) Balzerque S., UMRGV, INRA/CNRS, 2 rue Gaston Cremieux, 91057 Evry cedex, FRANCE PCR was performed on DNA from transformants of Arabidopsis thaliana plants from INRA (Versailles). The DNA fragment(s) resulting from the PCR were directly sequenced from the left or the right border to determine the genomic sequence flanking the insertion. T-DNA derived sequences were removed. Information to order the corresponding mutant line and a link to a database providing a graphical display of the insertion site are available at http://dbsgap.versailles.inra.fr/publiclines/. This sequence has	REFERENCE 1 AUTHORS Brunaud, V., Balzergue, S., Dubreucq, B., Aubourg, S., Samson, F., Chauvin, S., Bechtold, N., Cruaud, C., DeRose, R., Pelletier, G., Lepiniec, L., Caboche, M. and Lecharny, A. TITLE T-DNA integration into the Arabidopsis genome depends on sequences of pre-insertion sites JOURNAL EMBO Rep. 3 (12), 1152-1157 (2002) PUBMED 12446565 PREFERENCE 1 A A A COLOR OF TRANSPORTED TO A A COLOR OF TRANSPORTED TO A COLO	AJ592026 AJ592026 DEFINITION Arabidopsis thaliana T-DNA flanking sequence, right border, clone 600D05, genomic survey sequence. ACCESSION AJ592026 VERSION AJ592026.1 GI:37941650 KEYMORDS GSS; right border; T-DNA flanking sequence. SOURCE Arabidopsis thaliana (thale cress) ORGANISM Arabidopsis thaliana Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; endicotyledons; core endicotyledons; core endicotyledons;	Db 495 NNNNNNTGGGGGGGAAAAAAAAAAAAANNNNAANNAAAAAAAA
Oy 9441 TTATAATATAAGTAAGTAAGTAAGTAAGTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGC 9500	Db 550 AAAAANNAAAAAAAAAAAAAAAAAAAAAAAAAAAA	OY 902 AAATAMAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	8901 AGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTAGATGCTTTGAATGAA	8721 AAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAAATAAAAAAAA	QY 8481 TGCTTTAAATGATACAAAGAATATAAAAAAAAAAAAAAA

```
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 30
CL027236
                                        ş
                                                                       밁
                                                                                              Ś
                                                                                                                            밁
                                                                                                                                                     ঠ
                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                 밁
                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                             Matches 460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1896
                                                                                                                                                                                                               8641 AAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACA 8700
                 530
                                                                        470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CL027236 CL027236.1 GI:40471752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genome Sequencing Center
Washington University School of Medicine
Email: submissions@watson.wustl.edu
Insert Length: 175000 Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seq primer: RM1 TACGACTCACTATAGGGAGACLASS: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A physical map of the xenopus tropicalis genome Unpublished (2003)
Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kremitzki,C., Carter,J., McPherson,J.,
Mardis,E. and Wilson,R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae; Xenopodinae; Xenopus; Silurana.

1 (bases 1 to 1618)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kenopus tropicalis (western clawed
                                                                                                                                                                                                                                                         Similarity
                                                                                                                            GGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGG 888
                                                                                                                                                        GCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAA 9680
                ATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGAC 8820
                                                                                                                                                                                    AAAATTGACATATCAATCAAAGAGAGGAGAAAAAGGGAAAAAA 9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   quality sequence start: 1281 quality sequence stop: 1335. Location/Qualifiers
                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                 /cell_line="Stock 248 F7A2, inbred N7"
/clone_lib="CH216"
/clone="Vector: pTARBAC2.1; CHORI-216 Xenopus tropicalis
BAC library"
                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Xenopus tropicalis"
/mol type="genomic DNA"
/strain="Nigerian frog"
/db_xref="taxon:8364"
                                                                                                                                                                                                                                                                                                                                                                         'sex≃"male"
                                                                                                                                                                                                                                                                                                                                                                                        clone="CH216-25H10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                               .1618
                                                                                                                                                                                                                                                         0.9%;
                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                          Score 90.2; DB 10;
Pred. No. 3.2e-07;
D; Mismatches 622;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  frog)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Warren, W.,
                                                                                                                                                                                                                                                                      Length 1618;
                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Graves, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GSS 31-DEC-2003
                                                                                                                                                                                                                                          1,
                                                                                                                                                                                                                                           Gaps
                                                                                                                                                          8760
                589
                                                                       529
                                                                                                                              469
                                                                                                                                                                                      409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    71
                                                                                                                           RESULT 31
CL081234
LOCUS
                                                        VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                           SOURCE
                                                                                    ACCESSION
                                                                                                             DEFINITION
                                                                                                                                                                                                  밁
                                                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                          뫄
                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                             ORGANISM
                                                                                                                                                                                                  1429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8881 GAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTA 8940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      769
                                                                                 CL081234 DNA
CH216-161B9 RM4.1 CH216 Xenopus tropicalis
CH216-161B9, genomic survey sequence.
CL081234
Xenopus tropicalis (western clawed frog)
Xenopus tropicalis
Xenopus tropicalis
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
                                                                       CL081234.1
                                                                                                                                                                                                                               AA
                                                                                                                                                                                                                                                                                   AAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCAT 9660
                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAATTCAAAAATAATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCAT 9300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATT 9180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAA 9120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGAAGCCAAAATCGGA 9060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAA 1431
                                                                                                                                                                                                                                                          <u> АЙАЙАЙАЛАЛАЛАЛАЛАЛАЙАЛАЙЛАЛАЛАЛАЙАЙАЙАЛАЛАЙАЙАЙАСАЙАЙАСАМА</u>
                                                                                                                                                                                                                                                                                                                                                                         TTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATGCCGGATATGATAAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGAT 9480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTA 9420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA 9360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACC 9240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATT 9000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9723
                                                                       GI:40537147
                                                                                                               genomic
                                                                                                                            linear
                                                                                                                  clone
                                                                                                                            GSS 31-DEC-2003
                                                                                                                                                                                                                                                                                      9720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              649
                                                                                                                                                                                                                                                                                                                                                                         1308
                                                                                                                                                                                                                                                                                                                                                                                                      9600
                                                                                                                                                                                                                                                                                                                                                                                                                                1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      828
```

9137

1170

9197

9317 1230 9257

```
REFERENCE
AUTHORS
                                                                                               밁
                                                                                                                                    ş
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                      á
                                                                                                                                                                           밁
                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                               片
                                                                                                                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 545; Conserv
                                                                                                                                                                                                                8838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: Submissions@watson.wustl.edu
Insert Length: 175000 Std Error: 0.00
Seq primer: RM4 ctcaagggcatcggtcgagc
Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Xenopodinae; Xenopus; Silurana.

1 (bases 1 to 1824)
Kremitzki,C., Carter,J., McPherson,J., Warren,W.,
Mardis,E. and Wilson,R.
A physical map of the xenopus tropicalis genome
Unpublished (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Washington University School
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCATGCACAAGGAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGA
                                                                                                                                    TGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCAT
                                                                                                                                                                                                                                                     AACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCT
                                                                                                                                                                                                                                                                                                                           TACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTA 8717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                     quality sequence start: 612
quality sequence stop: 1100.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0.9%;
ilarity 41.7%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /cell_line="Stock 248 F7A2,
/clone_lib="CH216"
/note="Vector: pTARBAC2.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Xenopus tropicalis"
/mol type="genomic DNA"
/mol type="genomic DNA"
/strain="Nigerian frog"
/strain="Nigerian frog"
/db xref="taxon:8364"
/clone="CH216-161B9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 89.6; DB 10;
Pred. No. 4.3e-07;
0; Mismatches 761;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHORI-216 Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  inbred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Graves, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                     690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                   KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 32
DR141720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                   rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9018
Richards, S., Liu, Y., Bettencourt, B.R., Hradecky, P., Letovsky, S., Nielsen, R., Thornton, K., Hubisz, M.J., Chen, R., Meisel, R.P., Couronne, O., Hua, S., Smith, M.A., Zhang, P., Liu, J., Bussemaker, H.: van Batenburg, M.F., Howells, S.L., Scherer, S.E., Sodergren, E., Matthews, B.B., Crosby, M.A., Schroeder, A.J., Ortiz-Barrients, D., Matthews, B.B., Crosby, M.A., Schroeder, A.J., Ortiz-Barrients, D., Matthews, C.M., Metzker, M.L., Muzny, D.M., Scott, G., Steffen, D., Wheeler, D.A., Worlsy, K.C., Havlak, P., Durbin, K.J., Egan, A., Wheeler, D.A., Worlsy, K.C., Havlak, P., Durbin, K.J., Bgan, A., Gill, R., Hume, J., Morgan, M.B., Miner, G., Hamilton, C., Huang, Y., Waldron, L., Verduzco, D., Clerc, Blankenburg, K.P., Dubchak, I., Noor, M.A., Anderson, W., White, K.P., Clark, A.G., Schaeffer, S.W.,
                                                                                                                                                                                 Drosophila pseudoobscura
Drosophila pseudoobscura
Drosophila pseudoobscura
Eukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera, Brachycera, Muscomorpha,
Ephydroidea, Drosophilidae, Drosophila.

Ephydroidea, Drosophilidae, Drosophila.

To the Bases 1 to 1932)
                                                                                                                                                                                                                                                                                                                                           DR141720

DR32 bp mRNA linear EST 16-JUN-2005 49300102 Drosophila pseudoobscura embryonic cDNA library Drosophila pseudoobscura cDNA clone II3 3', mRNA sequence.

DR141720
                                                                                                                                                                                                                                                                                                                           DR141720.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAAAATTGACATATCAATCAAAGAGAGAGAGAAAAAGGGAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAAATTCAAAAAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u> АЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАДАЛАЛАЛАЛАЛАДАЛАЛАДАЛАЛА</u> 1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u> AGGAGACGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATAT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAA
                                                                                                                                                                                                                                                                                                                           GI:67886810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9723
                                                                                                                                    Bussemaker, H.J.,
```

1410

1470 9497 9437

9677

983

1043

9141

```
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
 밁
                       S
                                                        밁
                                                                                  S
                                                                                                                   밁
                                                                                                                                        ঠ
                                                                                                                                                                           仔
                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Sim:
Matches 538;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8422 AAGCAAGATTATGAAAATAATGATTACACAAAAAATATATTTCAGAAGTCAATGCTCTT
                             9022
                                                                                                                                                                                                                                                                                                                                                                                                                  444
 864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gelbart, W., Weinstock, G.M. and Glbbs, R.A. Comparative genome sequencing of Drosophila pseudoobscura: chromosomal, gene, and cis-element evolution Genome Res. 15 (1), 1-18 (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human Genome Sequencing Cer
Baylor College of Medicine
One Baylor Plaza, Houston,
Tel: 713-798-6667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI Trace Archive: 226717045
Insert Length: 1750 Std Error:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: stephenr@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Stephen Richards
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                              GGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAA
                                                                                                                                                                                                                                                                                             AAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACG
                                                                                                                                                                                                                                                                                                                                                       GTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACA
                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGCGAT
 AATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACT
                                                                                     GTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTA
                                                                                                                                                                             ATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Vector: pOTB7; Site_1: dt priming from poly A+ RNA, d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Drosophila
/mol_type="mRNA"
/db_xref="taxon:7237"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        dev_stage="0-18h embryos"/clone_lib="Drosophila pse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="I13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 89.2; DB 8;
Pred. No. 5.3e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches 763;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TX 77030,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pseudoobscura"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pseudoobscura embryonic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             : EcoRI; Site_2: XhoI; directionally cloned"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                          8781
                                                                                                                                                                                                                                                                                                                                                                                   8721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            443
                                                                                                                                                                             743
                                                                                                                                                                                                                                                                                                                                                       563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                      RESULT 33
CC187638
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9082
                                                                                                                                                                                                                                                                                                                                                                                                                               1524
                                                                                                                            1 (bases 1 to 1434)

Kremitzki,C., Higginbotham,J., |
Warren,W., Graves,T., Mardis,E.
Gallus gallus BAC End Reads
Unpublished (2003)
                                                                                                                                                                                        Gallus gallus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
Phasianinae; Gallus.
                                                                                                                                                                                                                                                                                                                                      CC187638
CH261-98P15_Sp6.1 CH261 Gallus
                           Email: submissions@watson.wustl.edu
Insert Length: 182000 Std Error: (
Seq primer: Sp6 ATTTAGGTGACACTATAG
Class: BAC ends
High quality sequence start: High quality sequence stop: 4
                                                                                     Genome Sequencing Center Washington University School of Medicine
                                                                                                                                                                                                                                                              Gallus gallus (chicken)
                                                                                                                                                                                                                                                                                                            genomic survey CC187638
                                                                                                                   Contact: Richard K. Wilson
                                                                                                                                                                                                                                                                                              CC187638.1 GI:30431538
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATTGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAA 9722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ААЛААЛААЛААЛАСЛААЛААGAGAAAЛAAЛAAAAAAGAAAAA 1564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTITAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    đđ
                                                                                                                                                              Wylie,K., Ca
. and Wilson,
                                                                                                                                                                                                                                                                                                                                        gallus
                                                           0.00
                                                                                                                                                                                                                                                                                                                                      A linear GSS 08-MAY-2
genomic clone CH261-98P15,
                                                                                                                                                               Carter,J.,
on,R.
                                                                                                                                                                           McPherson, J.,
                                                                                                                                                                                                                                                                                                                                                      GSS 08-MAY-2003
```

9681 1463 9621 1343

9561

1403

1283

9441

1223

1031 9647 972 9587

```
Ś
                                                                                                                                                   밁
                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
                         ş
                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 447; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                              9168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8628 AAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8868 TACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGC
AAACATCAATGTATATGCCGGATATGATAAAAATTAATAATAAGATAAGACAAATTCTAA
                                                                                                                                                                                                                                 TACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATC
                                                                                          AAAGAATCAAATAAATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGG
                                                                                                                                                TGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGT
                                                                                                                                                                                                                                                                       TCAATTAATAACCAAAAATTCAAAAAATAATATTACTTTAGCATCAAGTAGTGAATCGAA
                                                                                                                                                                                                                                                                                                                   GAATGTACACATTTCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                       AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAAACAAGAATATCAAGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATATGTGATTAAGAAAATGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAA 8867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /cell_line="UCD001, inbred 256"
/clone_lib="H261"
/clone_lib="H261"
/note="Vector: pTARBAC2.1; Site_1: EcoRI; Site_2: EcoRI;
CH261 Female Chicken library - For library and clone
ordering information: http://www.chori.org/bacpac"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /mol_type="genomic DNA"
/strain="Red Jungle Fowl"
/db_xref="taxon:9031"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="CH261-98P15"
/sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Gallus gallus"
/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 88.6; DB 9; Length 1434;
Pred. No. 6.6e-07;
0; Mismatches 648; Indels 1
                                                                                                                                                                                                                                   672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Richards, S., Liu, Y., Bettencourt, B.R., Hradecky, P., Letovsky, S., Nielsen, R., Thornton, K., Hubisz, M.J., Chen, R., Meisel, R.P., Couronne, O., Hua, S., Smith, M.A., Zhang, P., Liu, J., Bussemaker, H.J., van Batenburg, M.F., Howells, S.L., Scherer, S.B., Sodergren, B., van Batenburg, M.F., Howells, S.L., Scherer, S.B., Sodergren, B., Matthews, B.B., Crosby, M.A., Schroeder, A.J., Ortiz-Barrientos, D., Rives, C.M., Metzker, M.L., Muzry, D.M., Scott, G., Steffen, D., Wheeler, D.A., Worley, K.C., Havlak, P., Durbin, K.J., Egan, A., Gill, R., Hume, J., Morgan, M.B., Miner, G., Hamilton, C., Huang, Y., Waldron, L., Verduzco, D., Clerc-Blankenburg, K.P., Dubchak, I., Noor, M.A., Anderson, W., White, K.P., Clark, A.G., Schaeffer, S.W., Gelbart, W., Weinstock, G.M. and Gibbs, R.A., G., Schaeffer, S.W., Gelbart, W., Weinstock, G.M. and Gibbs, R.A., Comparative genome sequencing of Drosophila pseudoobscura: Chromosomal, gene, and cis-element evolution
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DR147304 2071 bp mRNA linear EST 16-JUN-2005 49027161 Drosophila pseudoobscura embryonic cDNA library Drosophila pseudoobscura cDNA clone Oll 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                          Human Genome Sequencing Center
Baylor College of Medicine
One Baylor Plaza, Houston, TX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophila pseudoobscura

Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;

Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;

Bphydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 2071)
                                                                                                                                                                                                                                                                     Email: stephenr@bcm.tmc.edu
NCBI Trace Archive: 226691688
Insert Length: 1750 Std Error:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila pseudoobscura
Drosophila pseudoobscura
                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Stephen Richards
                                                                                                                                                                                                                                                                                                                                                                                                                                              15632085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DR147304.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAAAAAAAAAAAA 1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAAAAGGGAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>AGGGAAAGCTAATAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATGAAGTAAAATTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGA
                                                                                                                                                                                                                                                                                                                                        713-798-6667
                                         library"
/note="Vector: pOTB7; Site_1: EcoRI; Site_2: XhoI; oligo dt priming from poly A+ RNA, directionally cloned"
                                                                                                                                                     /mol_type=::::::..../db_xref="taxon:7237"
                                                                                                                           /dev_stage="0-18h embryos"
                                                                                                                                                                                       organism="Drosophila/mol_type="mRNA"
                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                          clone_
                                                                                                                                                   'clone="011"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:67892394
                                                                                                     lib="Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9723
                                                                                                                                                                                                                                                                                                                                                            TX 77030,
                                                                                                     pseudoobscura embryonic
                                                                                                                                                                                                                                                                          0.25
```

Bussemaker, H.J.,

밁

5 문

문 S 밁 S 밁 ঠ ş

문 8 밁

```
Query Match
Best Local Simi
Matches 707;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
       8130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7110 AGAMAAAGTAAATGTAACGGCAAAAGAGGAAAAAAAATATTAAGCAAACAGCAGCAAATGC
                                                                                                                                                                                                                                                                                                                               912
                                                                                                                                                                                                                                                                                                                                                                                                                                                   792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAAT
      ACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAGT
                                                                                                                                                                              CAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCTGTAGG
                                                                                                                                                                                                                                      GAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGAAAT
                                                                                                                                                                                                                                                                                                                               TGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                       TGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGATGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGAATCGGAGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCAGTAGCAGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATTTGAA
                                                                                                                                                                                                            ATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           АҢGАЛАЛАЙGАЛЛАЙАЛЛАЙЙАЙАЙДАЙДАЛАЛАЛАЛАЛАЛАЛАЛАЙЙЙДАЛАЛАЛАД
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAAGCAAC
                                                                                          0.9%;
ilarity 41.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 87.8; DB 8;
Pred. No. 1e-06;
0; Mismatches 1016;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 2071;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2;
                                                                                                                                                                                                                                                                     1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  431
                                                                                                                                                                                                                                                                                                                               971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           491
                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                             CL082658
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                          COMMENT
                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                          35
1272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1572
                                                                                                                                                                                                                                                                                             CL082658 1457 bp DNA linear CH216-169B13_RM4.1 CH216 Xenopus tropicalis genomic CH216-169B13, genomic survey sequence.
                                                                                                                                                                                                                       Xenopus tropicalis (western clawed frog) Xenopus tropicalis
                                                                                                                                                                                                                                                                   CL082658.1 GI:40538571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAGGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAAATTATGGAAAATGTAAAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCCGGAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   АGAAAAAAAAAAGAAAAAAAAAAAAAAAAAAAAGAAAAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8834
```

5 맑 S 밁 S 망 δ 밁 8

GSS 31-DEC-2003 clone

8789 1869

1929

1809

1691 8549 8489 1571 8429 1511 8369 1451

1631

ঠ В S 밁 S 밁 8 밁 ঠ 밁 र् 밁

```
S
                                                            5
                                                                                                 멍
                                                                                                                                                                                         ş
                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                  밁
                                                                                                                              ş
                                                                                                                                                               밁
                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                         몽
                                                                                                                                                                                                                                                                                                                                                       맑
                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8675
                                                                 9155
                                                                                                                                                                                              9035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8435 AAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATA
                                                                                                                                                                                                                                                        8975 GAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTGATTA 9034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8735 GAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATA 8794
                                                                                                                                                                                                                              615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       High
High
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTG 8674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTAT 8614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATTACTTTAGCATCAA 9274
                                CAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAATTTGGCAAAGC
                                                                                                                                AATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTG
                                                                                                                                                             AGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAG 9094
                                                                                                                                                                                                                          TTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCAGAA 8914
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTA 8854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAAATTATACAAAGAGTACTACAG 8734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           quality sequence start: 393 quality sequence stop: 1347. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /cell_line="Stock 248 F7A2, inbred N7"
/clone_lib="CH216"
/note="Vector: pTARBAC2.1; CHORI-216 Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Xenopus tropicalis"
/mol_type="genomic DNA"
/strain="Nigerian frog"
/db_xref="taxon:8364"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="CH216-169B13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .1457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 87.6; DB 10;
Pred. No. 1.1e-06;
0; Mismatches 773;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                       554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8494
                                                                                                                                                                                                                            674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 36
CL081978
LOCUS
                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       855
                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae; Xenopodinae; Xenopus; Silurana.

1 (bases 1 to 1428)
1 (bases 1 to 1428)
Kremitzki, C., Carter, J., McPherson, J., Warren, W., Graves, T., Mardizki, E. and Wilson, R.
Mardis, E. and Wilson, R.
A physical map of the xenopus tropicalis genome Unpublished (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CL081978 1428 bp DNA 1
CH216-165F21_Sp5.1 CH216 Xenopus tropicalis
CH216-165F21, genomic survey sequence.
                                                                                                                                                                                                        Genome Sequencing Center
Washington University School of Medicine
Email: submissions@watson.wustl.edu
Insert Length: 175000 Std Error: 0.00
Seq primer: Sp5 atctgccgtttcgatcct
                                                                                                                                          Class: BAC ends
High quality sequence start: 309
High quality sequence stop: 527.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CL081978
                                                                                                                                                                                                                                                                                         Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                 Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                Xenopus tropicalis (western clawed frog)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CL081978.1 GI:40537891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAAAAAAAAAAGAAAAAAAAAGAAAAA 1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTTATAATAATATA 9454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATCAAAGAGAGAGAAAAAGGGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAAAAAATTGACATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCACTATTGAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTTAAAAATAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGACAGTTAGTGTAAAGAATCAAATAAATAGAACTAATAATGTTGATTTAGCAGGAAAAA 9394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCTAATCAGGTAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /sex="male"
/cell_line="Stock 248 F7A2,
/clone_lib="CH216"
                                                                                            /organism="Xenopus tropicalis"
/mol_type="genomic DNA"
                                                                                                                                1. .1428
                                                                 /strain="Nigerian frog"
/db_xref="taxon:8364"
                                                 clone="CH216-165F21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9723
                     inbred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear GSS 31-DEC-2003
genomic clone
                     N7 "
```

1274 9634 1214

9574

1154

9514

1034

9334

914

```
밁
                                                                                                                                                                                              S
                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
 S
                                 밁
                                                                Ś
                                                                                                   밁
                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 496;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8402
   9362
                                                                                                                                    9242
                                                                                                                                                                                                                                    816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               456
                                  996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTAG
                                                                                                                                                                                                                                                                  TAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTT
                                                                                                                                                                                                                                                                                                                     GACATGCTATTGTAGAAACTACTGGAAAACCAAGAATATCAAGCATTTACAAGAGCAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATA
ATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTAT 9421
                                                                                                                                                                    CCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCA
                                                                                                                                                                                                                                   GTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAA 8761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAG 870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTA 8641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTT
                                 GGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATAA
                                                                                                                                 AAAATTCAAAAATAATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACG 882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAGCGGTAGCCGGTGTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGT 858:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0.9%;
ilarity 37.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="Vector: pTARBAC2.1; CHORI-216 Xenopus tropicalis
BAC library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 87.4; DB 10 Pred. No. 1.2e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches 826;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                 1055
                                                                                                                                                                                                                                                                                                                                    9121
                                                                                                                                                                                                                                                                                                                                                                                                     9061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             575
                                                                                                   995
                                                                                                                                                                                                                                                                                                                                                                                                                                      695
                                                                                                                                                                    935
                                                                                                                                                                                                                                                                                                     815
                                                                                                                                                                                                                                                                                                                                                                      755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 37
AJ927291/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                 ORIGIN
                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                  воитсе
                                                                                                                                                                                                                                                                                            RS Pain, A., Renauld, H., Berriman, M., Murphy, L., Yeats, C.A., Weir, W., Kerhornou, A., Aslett, M., Bishop, R., Bouchier, C., Cochet, M., Coulson, R.M. R., Cronin, A., de Villiers, E., Fraser, A., Fosker, N., Gardner, M., Goble, A., Griffiths-Jones, S., Harris, D.E., Katzer, F., Larke, N., Lord, A., Maser, P., McKellar, S., Mooney, P., Morton, F., Nene, V., O'Neil, S., Price, C., Quail, M.A., Rabbinowitsch, E., Rawlings, N.D., Rutter, S., Saunders, D., Reger, K., Shah, T., Squares, R., Squares, S., Tivey, A., Walker, A.R., Woodward, J., Dobbelaere, D. A.E., Langsley, G., Rajandream, M.-A., McKeever, D., Shiels, B., Tait, A., Barrell, B. and Hall, N.

The genome of the host-cell transforming parasite Theileria annulate and a comparison with T. parva
L. Contact: Pain A.

Contact: Pain A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1056
                                                                                                                                                                                            The Pathogen Sequencing Unit
The Wellcome Trust Sanger Institute
Genome Campus, CB10 1SA, UNITED KINGDOM
Merozoite cDNA library: Frank Katzer and Brian Shiels, Division
Veterinary Infection and Immunity, ICM, University of Glasgow, t
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Theileria annulata
Theileria annulata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tam028d02_qlk, mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AJ927291 Theileria annulata merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Alveolata; Apicomplexa; Piroplasmida; Theileriidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AJ927291.1 GI:67497675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              АJ927291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA 9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA 1417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTCTGAAAAAGCATACAAAAATTGACATATCAATCAAAGAGAGGAGAAAAAAGGGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATA 9601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGCCGGATATGATAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATG 9481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 1139)
                                               /dev_stage="merozoite"
/lab_host="Bos taurus (cow)"
/clone_lib="Theileria annulata
                                 /note="country: Turkey:Ankara"
                                                                                                clone="tam028d02_q1k"
                                                                                                               /isolate="Ankara (clone
/db_xref="taxon:5874"
                                                                                                                                                                organism="Theileria"
                                                                                                                                                  _type="mRNA'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              å,
                                                                                                                                   D7) "
```

Theileria annulata cDNA clone

linear

EST 10-JUN-2005

1415

9721

1355

9661 1295 9541

1235

merozoite"

g of

```
ð
                                밁
                                                           Ś
                                                                                              밁
                                                                                                                                                                                                                                                            ફ
                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                           ঠ
                                                                                                                                                               밁
                                                                                                                                                                                        Ś
                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                            吊
                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                8063
                                                                                                                              8007
                                                                                                                                                                                                                                                                                                                            7827
                                                                                                                                                                                                                                                                                                                                                                                            7767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7107 ACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAA 7166
                                                                                                                                                                                             7947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    593
                                                                                                                                                                                                                                                                                            413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        891
                                                                                                                                                                                                                                                                                                                                                                                         TATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                         TAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAATATTGATGT
                                                                                                                                                                                                                                                            GAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGAGA 7946
                                                                                                                                                                                                                                                                                                                                                            NNAAAAANAINININININININAANINIAANININAAANININININININININININININAANIAAANINI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGACAAGAATAATATCACTTCTACTGGTGGTTTTGGGAACTGCAGGTCTTGCTTCCGCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGA 7466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTAGAAGATAGAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCAGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGCAACACATAAAATGAAAGTAACA 8148
                                                              ATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGG
                                                                                              AGGAGCAGTAGCAGGGCAGGAATTATTTCCGAAGCAAAAGATGC----CGGAAGCTCTT
                                                                                                                                                                                           AATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCTGT
                                                                                                                                                                                                                             Annaannanaanannanaanaannaanaanaanaanaannannannannannannannaannn
                                                                                                                                                                                                                                                                                            AANNNAMINAANAAANNNNNAAANNNAAAANNNNNNNAAAANNNAAANNAANNAANNAANNAAN
                                                                                                                                                                                                                                                                                                                            AGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAATTCAGAGGTTGAAATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AANNANNINAANNNAHAAAANNANNANNANNANNANNANNINNNNA---AANNNAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTTAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGC
                                ANNNANAANANANANANNNNNNNNNANNAANAANAANANCCNNAAAANNNAAAANNN 114
                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches 790;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 87.2; DB 1;
Pred. No. 1.2e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ν
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 38
CL113943
                                                           밁
                                                                                           S
                                                                                                                           밁
                                                                                                                                                                                           밁
                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                   र्
                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
맑
                         ঠ
                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 497;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                           8544 ACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGG 8603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae; Xenopodinae; Xenopus; Silurana.

1 (bases 1 to 1512)

Kremitzki,C., Carter,J., McPherson,J., Warren,W., Graves,T., Mardis,E. and Wilson,R.

A physical map of the xenopus tropicalis genome Unpublished (2003)

Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1512 bp DNA linear G88 05-JAN-200 ISB1-59E24_Sp6.1 ISB1 Xenopus tropicalis genomic clone ISB1-59E24, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Genome Sequencing Center
Washington University School of Medicine
Email: submissions@watson.wustl.edu
Insert Length: 75000 Std Error: 0.00
Seq primer: Sp6 ATTTAGGTGACACTATAG
Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 High quality sequence start: 880
High quality sequence stop: 1356
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Xenopus tropicalis (western clawed frog
Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CL113943.1 GI:40607578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAA 8723
                                                                                                                                                                                                                                                                                                                                                       AGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGT
TGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGG
                                                                                                                                                                                                                          GAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGAT 8783
                                                                                                                                                                                                                                                                                                                          AAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGA 8903
                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Xenopus tropicalis"
/mol type="genomic DNA"
/db xref="taxon:8364"
/clone="ISB1-59E24"
/clone=lib="ISB1"
/clone=lib="ISB1"
/note="Vector: pBeloBAC11; ISB-1 Xenopus tropicalis BAC
Library Segment 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .1512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 87.2; DB 10;
Pred. No. 1.3e-06;
0; Mismatches 683;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  88
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1512;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSS 05-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

8843

399

8663 279

```
RESULT 39
DR141924
LOCUS
                                                                                                                                                                                                KEYWORDS
SOURCE
ORGANISM
                                                                                                                REFERENCE
                                                                                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                       39
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           820
Drosophila pseudoobscura

Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;

Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;

Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 1783)

1 (bases 1 to 1783)

Richards, S., Liu, Y., Bettencourt, B.R., Hradecky, P., Letovsky, S.,

Nielsen, R., Thornton, K., Hubisz, M.J., Chen, R., Meisel, R.P.,

Nielsen, R., Thornton, K., Hubisz, M.J., Chen, R., Bussemaker, H.:

Couronne, O., Hua, S., Smith, M.A., Zhang, P., Liu, J., Bussemaker, H.:

van Batenburg, M.F., Howells, S.L., Scherer, S.E., Sodergren, E.,

Matthews, B.B., Crosby, M.A., Schroeder, A.J., Ortiz-Barrientos, D.,
                                                                                                                                                                                                                                                                               pseudoobscura
DR141924
                                                                                                                                                                                                                                                                                               DR141924 1783 bp mRNA linear EST 16-JUN-2005
49190649 Drosophila pseudoobscura embryonic cDNA library Drosophila
pseudoobscura cDNA clone O7 3', mRNA sequence.
                                                                                                                                                                                                Drosophila pseudoobscura
Drosophila pseudoobscura
                                                                                                                                                                                                                                      DR141924.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTGACATATCAATCAAAGAGAGAGAAAAAGGGAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAAGCATACAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAAGTCATGCTGCAGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:67887014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9723
                                               Bussemaker, H.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             699
                                                                       밁
                                                                                                         Ś
                                                                                                                                                    밁
                                                                                                                                                                                       S
                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 468;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                              9181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rives,C.M., Metzker,M.L., Muzny,D.M., Scott,G., Steffen,D., Wheeler,D.A., Worley,K.C., Havlak,P., Durbin,K.J., Egan,A., Gill,R., Hume,J., Morgan,M.B., Miner,G., Hamilton,C., Huang,Y., Maldron,L., Verduzco,D., Clerc-Blankenburg,K.P., Dubchak,I., Noor,M.A., Anderson,W., White,K.P., Clark,A.G., Schaeffer,S.W., Gelbart,W., Weinstock,G.M. and Gibbs,R.A. Comparative genome sequencing of Drosophila pseudoobscura: chromosomal, gene, and cis-element evolution genome Res. 15 (1), 1-18 (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: stephenr@bcm.tmc.edu
NCBI Trace Archive: 226707030
Insert Length: 1750 Std Error:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          One Baylor Plaza, Houston, Tel: 713-798-6667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human Genome Sequencing Center
Baylor College of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Stephen Richards
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15632085
      TCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACA
                                                                                                                                                                                                                                                              GGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAA
                                                                     GTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATT
                                                                                                                                                                                             AGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAA
                                                                                                                                                                                                                                      АЛАЛЛААЛЛААЛАGAAЛААЛААЛААGGAAЛЛААЛААЛААЛААЛААЛААДААДАА
                                                                                                                                                                                                                                                                                                                                                             GATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                        GAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        АЛЛЛGАЛЛЛЛААЛЛЛААЛЛААGAАЛЛАААЛААЛАААGAЛАААЛЛАААЛЛААДАЛААGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Vector: pOTB7; Site_1: EcoRI; Site_2: XhoI;
dt priming from poly A+ RNA, directionally cloned"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /dev_stage="0-18h embryos"
/clone_lib="Drosophila pse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="taxon:7237"
/clone="07"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Drosophila
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 87.2; DB 8;
Pred. No. 1.3e-06;
0; Mismatches 615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                77030,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pseudoobscura"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pseudoobscura embryonic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1783;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     oligo
```

Ş

밁 S 밁

В á 밁

á

9240

941

881

9060

761

821

9000

701 8940 641 8880 8820

581

8700

461

8760

521

8

밁 S 밁 ક

밁 δ 밁 Ś 밁 S 밁 δ 밁 á 밁 δ

밁

```
RESULT 40
CL041163
LOCUS
                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                               FEATURES
                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                        /ERSION
                                                                                                                                                                                                                         TITLE
                                                                 Bource
                                                                                        High
High
                                                                                                                  Genome Sequencing Center
Washington University School of Medicine
Email: submissions@watson.wustl.edu
Insert Length: 175000 Std Error: 0.00
Seq primer: Sp6 ATTTAGGTGACACTATAG
Class: BAC ends
                                                                                                                                                                                                                                                                                                                                       CL041163 1650 bp DNA CH216-51P23 Sp6.1 CH216 Xenopus tropicalis CH216-51P23, genomic survey sequence. CL041163 CL041163.1 GI:40497076 GSS.
                                                                                                                                                                                                                     Kremitzki,C., Carter,J., McPherson,J., Warren,W., Mardis,E. and Wilson,R.
A physical map of the xenopus tropicalis genome
                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
Xenopodinae; Xenopus; Silurana.
                                                                                                                                                                                                          Unpublished (2003)
                                                                                                                                                                                                                                                                                                               Xenopus tropicalis (western clawed frog Xenopus tropicalis
                                                                                                                                                                                               Contact: Richard K Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAATTCAAAAAATAATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAATGA 9726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATGCCGGATATGATAAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGAT 9480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAAGA 1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 1650)
                                                                           quality sequence start: 238 quality sequence stop: 581. Location/Qualifiers
              /organism="Xenopus tropicalis"
/mol_type="genomic DNA"
/strain="Nigerian frog"
/db_xref="taxon:8364"
                                                                   1. .1650
  /clone="CH216-51P23"
                                                                                                                                                                                                                                                                                                                                                                                          genomic clone
                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                  Graves, T.
                                                                                                                                                                                                                                                                                                                                                                                                      GSS 31-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                      밁
                                                            S
                                                                                        밁
                                                                                                               S
                                                                                                                                        밁
                                                                                                                                                               र्
                                                                                                                                                                                              문
                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 543; Conserv
8421 AAAGCAAGATTATGAAAATAATGATTACACAAAAAATATATTTCAGAAGTCAATGCTCT
                                                                                                                                            878
                                                                                                                                                                                                                                                                                                                                                                                                       578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            458
                                                                                                                                                                                                                                                                                                                                                                                                                              COGANAGAATOGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGA
                                                                                                                                                                                                                    TACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTTTAGCGGTAGCCGGTGTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u> ААЛАДАААА</u> САСА<u>А</u> АДААААААААААААААААААААААААААААА
                                      TACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGG
                                                                                                                  AGACGCTGCAGCTGCAGTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAA
                                                                                                                                                                                               AAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAAC
                                                                                                                                                                                                                                                                                                    TGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGT
                                                                                                                                                                                                                                                                                                                                                      TGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAA 8660
                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /sex="male"
/cell line="Stock 248 F7A2,
/clone_lib="CH216"
/note="Vector: pTARBAC2.1; (
BAC library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 87;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 10;
1.4e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHORI-216 Xenopus tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            inbred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N7 "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                    9260
                                                                                                                                                                       9200
                                                                                                                                                                                                                                                                            9080
                                                                                                                                                                                                                                                                                                     757
                                                                                                                                                                                                                                                                                                                            9020
                                                                                                                                                                                                                                                                                                                                                                               8960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8480
                                                                                            997
                                                                                                                                                                                                  877
                                                                                                                                                                                                                                                  817
                                                                                                                                                                                                                                                                                                                                                       697
                                                                                                                                                                                                                                                                                                                                                                                                          637
                                                                                                                                                                                                                                                                                                                                                                                                                                                            577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8840
                                          1057
```

g &	р Q	B 8	B 8	B &	p 8	DЬ
9681 1418	9621 1358	9561 1298	9501 1238	9441 1178	9381 1118	1058
AAAATTGACATATCAAAGAGAGAGAGAAAAAGGGAAAAAA 9723 	TAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAA 9680 	ATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATC 9620 	9501 TGCTTCGGCAACTGCCACTATTGAAAAAAATGTAAGTAAAATTTAATAATGCGATCCGAGA 9560	TTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGC 9500	TTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATATGCCGGATATGATAAAAA 9440	АЛАААЛАЛААЛАЛААЛАААСАЛАЛАДАЛАДАЛАДАДАДАД

Search completed: November 25, 2005, 20:31:17 Job time : 22535 secs

THIS PAGE BLANK (USPTO)

us-10-647-057-8.rnpbm / 5

```
Run
                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seg length: 0
Maximum DB seg length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wotal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                             Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
1.
Published Applications NA_Main:*

1: /cgn2 6/ptodata/1/pubpna/USO7_PUBCOMB.seq:*

2: /cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB.seq:*

3: /cgn2_6/ptodata/1/pubpna/USO9A_PUBCOMB.seq:*

4: /cgn2_6/ptodata/1/pubpna/USO9A_PUBCOMB.seq:*

5: /cgn2_6/ptodata/1/pubpna/USO9B_PUBCOMB.seq:*

6: /cgn2_6/ptodata/1/pubpna/USOB_PUBCOMB.seq:*

7: /cgn2_6/ptodata/1/pubpna/USOB_PUBCOMB.seq:*

8: /cgn2_6/ptodata/1/pubpna/USOB_PUBCOMB.seq:*

9: /cgn2_6/ptodata/1/pubpna/USOB_PUBCOMB.seq:*

10: /cgn2_6/ptodata/1/pubpna/USOB_PUBCOMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   November 25, 2005, 14:17:17; Search time 4501 Seconds (without alignments)
17868.911 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-647-057-8
9726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9793542 seqs, 4134689005 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 atgagcggcatcaaaaataa.....gagaaaaagggaaaaaatga 9726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19587084
```

RESULT 1

ALIGNMENTS

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	၁ ၁	21	20	19	18	17	16	15	14	13	12	11	10	ø	œ	7	თ	5	4	ω	N	–	Result No.
	79.2	79.2	79.2	79.2	80.4	107.6	116.2	116.2	1130	1130	1887	1887	2141	2141	2322	2322	2780	2780	9726	9726	9726	9726	Score
	0.8	0.8	0.8	0.8	0.8	1.1	1.2	1.2	11.6	11.6	19.4	19.4	22.0	22.0	23.9	23.9	28.6	28.6	100.0	100.0	100.0	100.0	Query
	8155	7437	7434	7434	1300	5528	6152	5361	1130	1130	1887	1887	2141	2141	2322	2322	2780	2780	11130	11130	9726	9726	Query Match Length
1 1	N	w	œ	w	7	7	ω	w	7	w	7	w	7	ω	7	w	7	w	7	w	7	ω	B
***************************************	US-08-781-986A-63	US-09-815-242-8869	US-10-470-048B-201	US-09-815-242-4761	US-10-668-749A-1	US-10-415-253-1	US-09-742-096-1	US-09-742-096-2	US-10-647-057-9	US-09-841-786-9	US-10-647-057-12	US-09-841-786-12	US-10-647-057-11	US-09-841-786-11	US-10-647-057-13	US-09-841-786-13	US-10-647-057-10	US-09-841-786-10	US-10-647-057-15	US-09-841-786-15	US-10-647-057-8	US-09-841-786-8	ID
2	Seguence 63, Appl	Sequence 8869, Ap	Sequence 201, App	Sequence 4761, Ap	Sequence 1, Appli	Sequence 1, Appli	Sequence 1, Appli	Sequence 2, Appli	Sequence 9, Appli	Sequence 9, Appli	Sequence 12, Appl	Sequence 12, Appl	Sequence 11, Appl	Sequence 11, Appl	Sequence 13, Appl	Sequence 13, Appl	Sequence 10, Appl	Sequence 10, Appl	Sequence 15, Appl	•	Sequence 8, Appli	Sequence 8, Appli	Description

밁

181

241 AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT

300 240 240

ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAA

120

60

0

180 120

		ი	ი			a	ი	Ω	ი	ი	ი			ი			ი			Ω			
	45	44	43	42	41	40	9	38	37	36	ω 5	34	<u>υ</u>	32	31	30	29	28	27	26	25	24	
	61	61.2	61.4	61.6	62.2	62.4	62.4	62.4	62.6	63.2	63.8	64.4	64.8	67.6	68.2	68.2	68.8	70.6	72.4	73.2	74.8	74.8	,
	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	
-	626	12237	6668	441	627	50000	1243	1062	673	996	1121	1712	1891	7442	4997	: 4911	31124	1130	7446	600	7107	7104	
	œ	თ	თ	9	7	œ	8	œ	7	æ	8	7	w	7	7	œ	ഗ	œ	7	φ	w	w	
	US-10-357-930-60960	US-10-311-455-2331	US-10-311-455-1670	US-10-450-763-11257	US-10-021-323-9336	US-10-706-635-24	US-10-425-115-172717	US-10-425-115-120013	US-10-424-599-57885	US-10-425-115-151933	US-10-425-115-115706	US-10-415-253-3	US-09-742-096-4	US-10-221-714A-409	US-10-282-122A-35506	US-10-470-048B-427	US-10-087-192-463	US-10-425-115-132399	US-10-282-122A-7578	US-10-972-079-13288	US-09-815-242-8291	US-09-815-242-4580	
	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	
	60960, A		1670, Ap	7,	9336, Ap	24, App1	172717,	120013,	57885, A	151933,	115706,	3, Appli	4, Appli	409, App	35506, A	427, App	463, App	132399,	7578, Ap	13288, A	8291, Ap	4580, Ap	

Sequence 8, Application US/09841786
Patent No. US20020054883A1
GENERAL INFORMATION:
APPLICANT: NAGARAJA, T. G.
APPLICANT: STEWART, GEORGE C.
APPLICANT: NARAYANAN, SANJEEV K.
APPLICANT: CHENGAPPA, M. M. Ś 밁 δ 밁 á 片 US-09-841-786-8 US-09-841-786-8 Query Match 100.0%; Score 9726; Best Local Similarity 100.0%; Pred. No. 0; Matches 9726; Conservative 0; Mismatches SOFTWARE: PatentIn Ver. SEQ ID NO 8 TITLE OF INVENTION: RECOMBINANT FUSOBACTERIUM NECROPHORUM LEUKOTOXIN TITLE OF INVENTION: VACCINE AND PREPARATION THEREOF FILE REFERENCE: 30296
CURRENT APPLICATION NUMBER: US/09/841,786
CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/558,257
PRIOR FILING DATE: 2000-04-25
NUMBER OF SEQ ID NOS: 15 LENGTH: 9726
TYPE: DNA
ORGANISM: Fusobacterium necrophorum 181 ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTTAACAGAA 121 121 ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAGGATAATGTTTATGACATTACT 61 GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC 61 GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC 1 ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA 60 1 ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAGGATAATGTTTATGACATTACT 180 DB 3; 0 Length 9726; Indels 0 Gaps

유 성	ß 8	g &	<u> </u>	8 8	₽ 🎝	₽ ₹	용 성	B &	B &	B &	B &	유 성	B &	B 8	99 Q	B 8	유 성	B
1321 CTCAGTATCGGAGCGGGATATATTTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGA 1380 	1261 GCAGCTACTTCTCCATTAAAAATTACCAATTTATATTTGGAGAAAGCCAATGGAAAACTT 1320	1201 GAAGCAACAGAAGGCAAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGA 1260 	1141 GGATTTTTAGGTTTATTGACAAGTAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGTC 1200	1081 AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCTATCAATTTAAAT 1140	1021 GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT 1080 	961 ACTCCTTTAAGTTTATCAGATGTGGAAGCTTCCGTAAGAGTAAATAAA	901 AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGGAAAAAGAAACTTATAAC 960 	841 AATACCAAAGCAAATATTGAATCTGATGCTGTTATTGGAAGCAGATGGAAATATAAAAATT 900 	781 CAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA 840 	721 TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCT 780	661 ACAGATTITAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT 720	601 ATCGGTTTATATGCCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT 660	541 ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAAATCAATGCTGTTGAAGGC 600	481 GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA 540 	421 ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG 480	361 ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT 420 	301 AACTTTGTCAATGGAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAATAAA 360 	AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGGTAAATAATCTTTTT
	₽ Ş) B &) B &	B &) B &	Db Qy	B &) B &) B &	S &	B 8	}) B &) B 5) B 8	}) Db	Q
2401 AGAATGACAATTATTCTTCCGGATGGAACTTCAAAACAGGAACTGCTATAGAAATTGCA 2460	THATTGAATGCATTTTCAGAAAAATTGGATGGAAAACCGGAGCTTTTACTAAATGGTGAA	2281 TTTGGAAAAGAAACCICCAGAATATGATCGACAGATTTGAATCTTATTGAAAAA 2340 2281 TTTGGAAAAGAAACCAGAATATGATCCGAAAAGATATTGAATCTTATTGAAAAA 2340 2281 TTTGGAAAAGAAACTCCAGAATATGATCCGAAAAGATATTGAATCTATTGAAAAA 2340	221 AAAATCCTTCAAAAATGGCAAAGTCTGTTATTGATAAATTAGAACTTTTAAAGAGAGCT	161 CATGCTGAATTGGTATCGGAAGGAAAAATTGATATCAACATGAAAATTAAAATTGAATAT	GAAATGCAGCAGTTTTTTATGGAAACTATAAAATAATAGCTTGTGACAATTGCCGAT	041 CGAGCGACTACGTCAAGTGGAAGTGTGGCTGTACGAAAGGAAAAAAAA	981 AGACTTICTTCAGAAGTGAAGGAAGTAATGTAAGGGCATTAAATGAAGCTCAAAATCTT 	921 GIGICIGCAACCAIRGCAAATCAIRATAATTCIGCTTCIGGCAATAGGAGAGAGAGGGGA	GGAGGGACAGTGTCAATGAGAAATAAAGAATAAGCTAACGAACTTATTTAGTGTCGGT	BOI GAICACGITTATGAAICAGGTCAICTAAAATCAAITTAGATGCAATGAAAACAGCGGTTT	ATTACTIAAAATAGTGTTCTGCAAACAGGATCTGGTTTTGGGAACCTTCCAAGTTTATGAAT	681 CGTATAGATGTAGATGGTACATGCCAAGAAGGGACTAAATGTGGAGGCTCATAAC	621 TIGGGGATAGIGGIRANIGGGGITGGGGTGCAAARATITTCTAACTATAANGCTICCTCC	Sol GAIGALGIANAIG GAAGGGAGGAGGAGGAGGAGGGAGGGGGGGGGG	SOL GARGEGIANAFIRAATCTTCCGTCAAGATTGCTAAAGGAGAAAGGAAAAGTAGAATCAGAAAAGTAGAATCAGAAAAGTAGAATCAGAAAAGTAGAATCAGAAAAGTAGAATCAGAAAAGTAGAAAAGTAGAAAAGTAGAAAAGGAGAAAAGTAGAAAACGGAAAAGTAGAAAACGGAAAAAGTAGAAAACGGAAAAAGTAGAAAACGGAAAAAGTAGAAAACGGAAAAAGTAGAAAACGGAAAAAGGAAAAGGAAAAAGGAAAAAGGAAAAAGGAAAA	CONTROL OF THE STATE OF THE S	381 GAAGTAAAATCGAAGGGAAGAGCAGATATTACTTCAAAATCTGAAAATACTATTGATGCT	1381 GAAGTAAAATCGAAGGGAAGAGCAGATATTACTTCAAAATCTGAAAATACTATTGATGCT 1440

3361 T 3361 T 3421 P 3481 G 3481 G	Qy 3001 AV Db 3001 AV Qy 3061 Q Db 3061 Q Db 3121 AV Db 3121 AV Db 3121 AV Db 3121 AV Db 3121 AV Db 3121 Q Db 3121 Q Db 3241 Q Oy 3241 Q	Qy 2461 A Db 2461 A Qy 2521 T Db 2521 T Qy 2591 T Db 2591 T Db 2591 T Db 2591 T Db 2701 G Db 2761 G
TCAGAAGAAGACCAGAGGATTTATTTGGCAAAATCGGAAACCATAGATTTTTTGGCAAAATCGGAAACCATCAGAAGAAATCAGAAAATCAGAAAAATCAGAAAAATCAGAAAAATCAGAAAAATTACAGAAAAATTACAGAAAAATTACAGAAAAATTACAGAAAAATTACAGAAAAATTACAGAAAAAATTACAGAAAAATTACATTACAGAAAAAATTACATTACAGAAAAAATTACATTACAGAAAAAAATTACATTACAGAAAAAATTACATTACAGAAAAAATTACATTACAGAAAAAATTACAGATTACAGAAAAAATTACAGATTACAGAAAAAATTACAGATTACAGAAAAAATTACAGAAAAAATTACAGAAATTACAGAAAAAATTACAGAAAAAATTACAGAAAAAATTACAGAAAAAATTACAGAAAAAATTACAGAAAAAAATTACAGAAAAAAATTACAGAAAAAAATTACAGAAAAAAATTACAGAAAAAAAA	NTCAGTAAGGCAAGAGTTTCCAT 	CTATGTTCAGGGAGAAATGAA
	TCAGTAAGGCAAGAGTTTCCATTGATGACGAAGCATATTTGAAAGCTAATAAAAAATT	AACTATGTTCAGGGAGAAATGAAAAATTAGAGGAAAAATTACCGAAAGGATTTAAAGCT
	GCTAATAAAAATT 3060 [AAAGGATTTAAAGCT 2520 AAAGGATTTAAAGCT 2520 AAAGGATTTAAAGCT 2580 ACAGGAGTAGGAAAT 2580 ACAGGAGTAGGAAAT 2580 ACAGGAGTATCCTCT 2640 AGAGATGTTTCTTCT 2640 AGAGATGTTTCTTCT 2640 AGAGATGTTTCTTCT 2640 AATTAAAGCAGAAACA 2700 GTATCCGTTGGAAACA 2700 GTATCCGTTGGAAACA 2760 AAATTAAAGCAGAAACA 2760 AAATTAAAGCAGAAACA 2760 AAATTAAAGCAGAAACA 2820 GGAAGTGCAGTCGGA 2820 GGAAGTGCAGTCGGA 2820 GGAAGTGCAGTCGGA 2820 GGAAGTGCAGTCGGA 2820 GGAAGTGCAGTCGGA 2820 GGTAAAGAAAAAGCT 2880 GTTTCATGTAGCGGGA 2940 AGTTATAGTGGAGGT 3000 AGTTTATAGTGGAGGT 3000 AGTTTATAGTGGAGGT 3000
Q D Q D Q D Q Q D Q Q D Q Q D Q Q D Q Q D Q Q D Q Q D Q Q D Q Q D Q Q D Q Q D Q Q D Q Q Q D Q Q Q D Q Q Q Q D Q Q Q Q D Q	Q	Q B Q B Q B Q B Q B Q B Q B
4381 ĠĊĊĀĀĀĠĀTĠTĊĀĀĀĠĀ 4441 AĀĀGĀTĀĀĀĀĀĀĀĀTĀTTPĀ	4 4 4 4 4 4 4 4	3541 TCTTTCAGTTTGGAGTA 3601 GCTGTCGTAGATGGAGTA 3601 GCTGTCGTAGATGGAGTA 3601 GCTGTCGTAGATGGAGTA 3661 TCTTCTGATTCTACTTTT 3661 TCTTCTGATTCTACTTTT 3721 ATTGGAAGTGAAATAGC 3781 ATTCAAAGTAAAACAAGT 3781 ATTCAAAGTAAAACAAGT 3841 AAAGTAAATGCTTTGAGT 3841 AAAGTAAATGCTTTGAGT 3841 AAAGTAAATGCTTTGAGT 3841 AAAGTAAATGCTTTGAGT 3861 TGTGAACAATGAGTAGACAAGT 3861 ATTCAAAGTAAATGCTTTGAGT 3861 AAAGTAAATGAATGTAGACAAGT 3861 GTGAACAATGAAGTTTGAT 3901 AAAGAAAGTGGAGGACAA 3901 AAAGAAAGTGGAGGACAA 3901 AAAGAAAATGGATGTTGAT 3961 GTGAACAATGGATGTTGAT 4021 CAAAAAATGGATGTTGAT 4021 CAAAAAATGGATGTTGAT 4021 CAAAAAATGGATGTTGAT 4021 CAAAAAAATGGATGTTGAT 4021 CAAAAAAATGGATGTTGAT 4021 CAAAAAAATGGATGTTGAT 4021 CAAAAAAATGGATGTTGAT 4021 CAAAAAAATGGATGTTGAT 4021 AATTTACAAGCTGGAAAAA
GCCAAÁGATGTCÁAAGGÁAGTTCTGATCTÁGCÁAÁAGAATATCAGGATTAAAATGTAATGGA 4440 AAAGATAAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATACG 4500	AACAACAAGCTGGAAAGCTCTATTAGTGGGGGGAGATATACTAACGTTAATCGAGCGGAC CCAAAAAGCTCTTTTAGCAACCACTCAAGTGGAGAGTATACTAACGTTAATCGAGCGGAC	
AGGÉTTACTAAATGA 4440 GAAATGGTTATTATACG 4500		

6781 ACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGT 6840	Db Qy	5701 GTACGAAATGCTTTGGTAAAAAGCAAATCTCATTCATCTATTAAAACAATTGGAATTGGA 5760 	, B &
721 GTOGCAGIACCAMARIGATICAN CANACACAMARIA CONTRACTOR CO) D 4	5641 GTAGCAGTTAATATATATACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAAAT 5700 	B &
651 GTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCA 6720 6661 GTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCA 6720 6661 GTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAAGCAGCA 6720	S & &	5581 GTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGA 5640	B &
bul Glogangang-Anggaliliggia-Anggang-Anggaliliggali) b 9	5521 GAAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAA 5580	B 8
541 GAGGCCGGAGGCAGCAGCCGTTTTCCGTAAATCAATTTTGCAGGAAAAGAACGAAAGAT) p 5	5461 TTGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAA 5520	B &
481 ACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTA 481 ACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGAGTCGCAGCAGCCGGGGTA 481 ACAGCAGATTCTAAGCAAGGAATTTTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTA 481 ACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTTGGAGTCGAGTCGCAGCAGCCAGGCAGC	S & &	5401 GCAGTCGGAGGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACC 5460	B %
421 AAGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGTTTCGGAGAAGAGCTGAAATT	QУ	5341 GATCAAGATAGAAAAATATCAATGTGACTGCAAAAGATTATATCTATGACCAATACTATA 5400	V Q dd
361 GTTGGTGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATATTATAAAAAGAAATACC	B &	5281 AATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAAT 5340	용 성
301 CAILAILUGIAAANICAGSAGAIIACACGAAIILCGAIGCAGAGIACIAGGIICIGIIGGI 301 CATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGAGTAGTTCTGTTTGGT 301 CTTATTCTGTAAAATCAGGAGATTACACGAATTACGAATTAGGTTAGTTCTTTTTTTT	र वि	5221 ATTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACA 5280	g &
241 AICARCARGOITTA IGARGARACKORANGCIC IIGIRGARATI ICLAIA IIANAA IGARAARACKORANGCIC IIGIRGARATI ICLAIA IIANAA IGARAARACKORANGCIC IIGIRGARAATTCTATATATATAAATGCAAAA 241 AICARCARGOTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCTATATATA	?	5161 GAGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAGATCAAAAAACAATAAATA	g &
181 AAATICTTIATTGGCAAATIGCCGCTGGTTCAGGACAAGCCGAGGTGGCAGGAACTGTTAAT 181 AAATICTTTATTGGCAAATIGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAAT 181 AAATICTTTATTGGCAAATIGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAAT) B &	5101 GGAGGAATGGTATCTGTCAATCGTGGTTCTGATGAAACGGAAGCTTTAGTTAG	B 8
121 AAANGAANATANGTAATANAANGGATTTGTTKCCATKCTTCAGCTGATKCTTTA 121 AAAAGAANATANGTAATANAANAGGATTTGTTACCATTAGTTCAGCTACTCATACTTTA 121 AAAAGAANATAAGTAATANAANAGGATTTGTTACCATTAGTTCAGCTACTCATACTTTA) B &	5041 GATTCTCATATTACAAACGTTTCTGCTGGAQGCGCTGCAAGTATTAAGCAGGCTGGAATC 5100	B 8
Ubl GTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATTAA	D & &	4981 GGAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGAAT 5040	B &
AAAGATTOTACAGTGATTGCTTAAAGAAGAAACAGATGATTACTACTCAAGGGCAA) b &	4921 GCGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTACA 4980	B 8
941 GCAGCAATAGGAGCCTCAACCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTA 941 GCAGCAATAGGAGCCTCAACCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTA 941 GCAGCAATAGGAGCCTCAACCAGTGTGAATGAAAATTACAGGATCTACAAAAGCATATGTA	D 5	4861 GCAAATAATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTTCTACG 4920	B 8
A 1 ACADAS C COM ISCUSSIANI I SCIAMI I A ICADAS ACADA CALLANI I COLLANI I A ICADAS ACADA CALLANI I CALLANI I A ICADAS ACADA CALLANI I CA	D &	4801 AATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGAAC 4860 	g Q
	}	4741 CTTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCA 4800	B 8
761 GCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTTA	? B	4681 GCGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTGGA 4740 	B &
5761 GCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTA 5820	— و	21 AATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTCAT 4	D

5	,
7081 CACAMTAKCTCTGGATTCCGTACGAAATCGGAAAAGGAGACACCAATTCACGAAAAGGAGAAATCTAACGAAAAAAATTCACAAATTCACAAATTCACAAAATTCACAAATTCACAAAATTCACAAATTCAAAATTCACAAATTCACAAATTCACAAATTCACAAATTCACAAATTCACAAATTCACAAATTCA	6841 TCAGCCGGAGCTGGAATTCTTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATT 6900 6841 TCAGCCGGAGCTGGAATTCTTTGCAGCCGGAGTATCTTGGAGTGGTTTCTGTCAATAATATT 6900 6841 TCAGCCGGAGCTGGAATACTCTTGCAGCCGGAGTATCTTGACTGTTCTTCTGTCAATAATATT 6900 6901 GCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCTTCTACTGATGTAAAT 6960 6901 GCAAATAAGGTCTTAATAAATTTCGAATTCCTTAATACACTCTTTACTACTGATGTAAAT 6960 6961 GTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGCGCAGGTCT 7020 6961 GTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGCGCAGGTCTT 7020 6961 GTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGCGCAGGTCTT 7020 7021 GCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTT 7080 7021 GCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCCAGTT 7080 7081 CACAATAACTCTGATTTGACTTCCGTAACACTATAAATAGTTCTGTGATAGCTCCAGTT 7080 1
	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
8221 8221 8281 8281 8341 8341 8401 8401 8521 8521 8521 8531 85401 8541 8761 8761 8761 88821 88821 8941	Db 7921 ACTGCTGAAGGACTTCTGTAAGGAAATCAATGTAAAATCAAAATCAAAATCAAAATCAAAATCAAAATTATT

Gapa

0

60

```
RÉSULT 2

US-10-647-057-8

US-10-647-057-8

Sequence 8, Application US/10647057

Publication No. US20040047871A1

GENERAL INFORMATION:

APPLICANT: NAGARAJA, T.

APPLICANT: NAGARAJA, T.

APPLICANT: NAGARAJA, T.

APPLICANT: CHENGAPPA, M.

TITLE OF INVENTION: RECOMBINANT FUSOBACTERIUM NECROPHORUM LEUKOTOXIN VACCINE AND PREF

TITLE OF INVENTION: THEREOF

FILE REFERENCE: PCT-30962

CURRENT APPLICATION UNDERS: US/10/647,057

CURRENT APPLICATION UNDERS: US/10/647,057
                                                                                                                                                                                                                                                                                                   8 8 8 8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  음 성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                       . g.⊸5
                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                       8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   용
                                                                                                                                                                                                                                                                                                                                                                                                          9481
                                                                                                                                                                                                                                                                                                                                                                                                                                                 9421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9121
                                                                                                                                                                                                                                                                 9721
                                                                                                                                                                                                                                                                                                                             9601
                                                                                                                                                                                                                                                                                                                                                                    9541
                                                                                                                                                                                                                                                                                                                                                                                                                              9481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9181
                                                                                                                                                                                                                                                9721
                                                                                                                                                                                                                                                                                                                                                9601
                                                                                                                                                                                                                                                                                                                                                                                                         AAATGA 9726
                                                                                                                                                                                                                                                                                     AAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCAT
                                                                                                                                                                                                                                                                                                                                                                  TTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATGCCGGATATGATAAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATGCCGGATATGATAAAAATTATAATATAAGTAAGGACAAATTCTAAGGCTATTGCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGGTGGCTGAAGCAAGAGGTGCAGGAAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGACATGCTATTGTAGAAACTACTGGAAAAACAAGAATATCAAGCATTTACAAGAGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAATTCAAAAAATAATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGA
                                                                                                                                                                                                                                                 9726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9360
                                                                                                                                                                                                                                                                                     9720
                                                                                                                                                                                                                                                                                                         9720
                                                                                                                                                                                                                                                                                                                                                                                                          9540
                                                                                                                                                                                                                                                                                                                                                                                                                              9540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9060
                                                                                                                                                                                                                                                                                                                            9660
                                                                                                                                                                                                                                                                                                                                                9660
                                                                                                                                                                                                                                                                                                                                                                    9600
                                                                                                                                                                                                                                                                                                                                                                                       9600
                                                                                                                                                                                                                                                                                                                                                                                                                                                  9480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9240
                                                                                                               PREI
                                                               S
                                                                                                                                멍
                                                                                                                                               중 유
                                                                                                                                                                                      S
                                                                                                                                                                                                            밁
                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                         S
                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 100.0%; Score 9726; Best Local Similarity 100.0%; Pred. No. 0; Matches 9726; Conservative 0; Mismatches
                                                                                           841
                                                                                                             841
                                                                                                                                                                                                                661
                                                                                                                                                                                                                                    661
                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
             961
                               961
                                                   901
                                                                     901
                                                                                                                                   781
                                                                                                                                                     781
                                                                                                                                                                        721
                                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  μ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                                                  GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA
                                                                                                                                                                                                                                                                                                                                                  GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA
                                                                                                                                                                                                                                                                                                                                                                           ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                  AACTTTGTCAATGGAAAAATTGAAGTAGAATGGGATTATCAACGGAATTCGAGAAAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTTTAATGATTTTGGGATTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
           AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT
                                                                                                                                                                                   TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCCT
                                                                                                                                                                                                                                                       ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT
                                                                                                                                                                                                                                                                 ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT
                                                                                                                                                                                                                                                                                                          ATTCCATTGAATCCGAATGGAAGGATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTATGACATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTTATGACATTACT
                                                                                                                                                                         TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCT
                                                                                                                                                                                                                                                                                               ATTICCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACTTTGTCAATGGAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA
                                                                                          <u>AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9726;
```

540

480

480

420 360

420

540

960

900 900 840

960

840

780 720 720 660 660 600 360

300 300 240 240 180

2041 CGAGCGACTACGTCAAGTGGAAGTGTGGCTGTACGAAAGGAAGAAAAAAGAAAACTTATT 2100	1921 GTGTCTGCAACCATAGCAAATCATAATAATTCTGCTTCTGTGGCAATAGGAGAGAGTGGA 1980 1981 AGACTTTCTTCAGGAGTGGAAGGGAGTAATGTAAGGGCATTAAATGAAGCTCAAAATCTT 2040	61 GGAGGAGACAGTGTCAATGAGGAAATAAAGAATAAGCTAACGAACTTATTTAGTGTCGGT 192	191 GATCACGTTTATGAATCAGGTCATCTAAAATCAATTTTAGATGCAATAAAACAGCGGTTT 1860	81 CGTATAGATGTAGATGGATATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAAC 17 41 ATTACTAAAAATAGTGTTCTGCAAACAGGGATCTGATTTGGGAACTTTCCAAGTTTATGAAT 18 41 ATTACTAAAAATAGTGTTCTGCAAACAGGGATCTGATTTGGGAACTTTCCAAGTTTATGAAT 18 41 ATTACTAAAAATAGTGTTCTGCAAACAGGATCTGATTTTGGGAACTTTCCAAGTTTATGAAT 18	1621 TTGGGGGATAGTGGTAATGGGGTTGTGGCTGCAAATATTTCTAACTATAATGCTTCCTCC 1680	561 GATGATGTAAATGTGAGAAGTGAAGCGATTAATTCCATTCGAGCTGCTGTAAAAGGTGGA 16 	O1 GAAGGAGAAATAAATCTTCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACG 15 O1 GAAGGAGAAAATAAATCTTCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACG 15 O1 GAAGGAGAAAATAAATCTTCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACG 15	441	21 CTCAGTATCGGAGCGGGATATATTTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGA 13 81 GAAGTAAAATCGAAGGGAAGAGAGAGATATTACTTCAAAATCTGAAAATACTATTGATGCT 14	261 GCAGCTACTTCTCCCATTAAAAATTACCAATTTATATTTGGAGAAAGCCAATGGAAAAACTT 13 321 CTCAGTATCGGAGCGGGATATATTTCTGCAAAAGTAATTCCAATGTAACTATTGAAGGA 13	201 GAAGCAACAGAAGGAAAGGCAAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGA 126 261 GCAGCTACTTCTCCATTAAAAATTACCAATTTATATTTGGAGAAAAGCCAATGGAAAACTT 132	141 GGATTTTTAGGTTTATTGACAAGTAAGTCCAGTGTCGTTATTGGAAAAAGATGCCAAAGTC 120 201 GAAGCAACAGAAGGAAAGGCAAATATTCATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGA 126	1 GGATTTTTAGGTTTATTGACAAGTAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGTC 12	1 AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCTATCAATTTAAAT 1	1021 GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT 1080
OY 3121 ACGANANTICGGGGGTTCGGGGTTCGGGTTANTICALIA TANANTITICANA 3100 Db 3121 ACGANANATGCGGCGGTCGGGGTTGCTGTTGCGGTANATGATATTCANACANA 3180 Qy 3181 GCTTCCATTGAAGATAATGACGAAGGAAAGTAAATATGATAAAGAATAAAGATGAATGA	3061 GCTT 3061 GCTT	ט ט ט	OY 2881 GAATTATCAGGAGAAAATATTAATGCAGATGCATTGAACAGACTTTTTCATGTAGCGGGA 2940	Qy 2821 GGAAGATTAAATGTTCAAAGATCGAAAAATTCAGCTATCGTAGAAGCTAAAGAAAAAGCT 2880		QY 2641 GTGGGAGGAGCTTTCCTTGGTAGAACAGGACAATTATAGCAAGGTATCCGTTGGAAAA 2700	2581 TATG 2581 TATG	QY 2521 TTTCAGAAGGATTGAGTGGACTGATTAAAGAAACTTTGAATTTTACAGGAGTAGGAAAT 2580 	QY 2461 AACTATGTTCAGGGAGAAATGAAAAAATTAGAGGAAAAATTACCGAAAGGATTTAAAGCT 2520	2401 2401	OY 2341 TTATTGAATGCATTTTCAGAAAAATTGGATGGAAAACCGGAGCTTTTACTAAATGGTGAA 2400	OY 2281 TITGGAAAAGAAACGAAAACTCCAGAATATGATCCGAAAGATATTGAATCTATTGAAAAA 2340	QY 2221 AAAAATCCTTCAAAAATGGCAAAGTCTGTTATTGATAAATTAGAACTTTTAAAGAGAGGT 2280	Qy 2161 CATGCTGAATTGGTATCGGAAGGAAAAATTGATATCAACAGTGAAAATAAAATTGAATAT 2220	

9 9 9 9 9 9 9

	•	•					•			•				•	• `		
4261 AGTTCTGGAGCGG	4201 GCAAAAGCTCTTT 4201 GCAAAAGCTCTTT	4141 AACAACAAAGTAA 4141 AACAACAAAGTAA	081	4021 CAAAAAATGGATG 4021 CAAAAAATGGATG	3961 GTGAACAATGAAG 3961 GTGAACAATGAAG	3901 AAAGAAAGTGGAG 3901 AAAGAAAGTGGAG	3841 AAAGTAAATGCTT 3841 AAAGTAAATGCTT	3781 ATTCAAAGTAAAA 3781 ATTCAAAGTAAAA	3721 ATTGGAAGTGGAA 3721 ATTGGAAGTGGAA	3661 TCTTCTGATTCTA	3601 GCTGTCGTAGATG	3541 TCTTTCAGTTTGG	3481 GGAGTAAAAAAG 3481 GGAGTAAAAAAAG	3421 AATAAAATTACGG 3421 AATAAAATTACGG	3361 TCAGAAGAAAGAC 3361 TCAGAAGAAAGAC	3301 ATTTCTGTTGCCG	3241 GTAACAGTAACTG 3241 GTAACAGTAACTG
AGTTCTGGAGCGGGATTAGGAAATTATCAAGGGGCTGTTTCTGTCAATAAGATTGACAAT 	CTTTTAGCAACCACTCAAGTGACTGCTGCAGTGACGACGGGAGGGA	aacaacaaagtaaatgcttctattagtggtgggagatatactaacgttaatcgagcgga 	AATTTACAAGCTGGAAAGTCAAATGGAACTGTAGGGGCTACTGTGGACTGTTGCCAAATTA	CAAAAAATGGATGTTGATGTCACTGCTTATCAAGCGGACACCCAAGTGACAGGAGCTTTA	GTGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGC	aaagaaagtggagacaaggaaaaagttatctattgggaacttctgcttctatcaactta 	AAAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTTGGAAGCAGTT 	ATTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTTCGAAATGCCAATAAATTT 	ATTGGAAGTGGAAATAGCAACATCAGTGCTGGTTTAGCTGGAGCGGCTGCTGTAAATAAT	TCTTCTGATTCTACTTTTGTTGGAGCATGGGGCGGATCTGCTGCACTTCAGTGGAATCAT	CTGTCGTAGATGAGTAAAGATAAATTTGAAGGGAGCAAATAAAAAGGTAGAGGTGACT 	TCTTTCAGTTTGGGAGCTTCTGGAAGTGTTTCTTTCAATAATATTAAAAAGGAAACATCT	GGAGTAAAAAAAAGCGGGGAATCTTCCTTCGAACGTTTCTCATACTCCCGATAAAGGACCG	ACGGATAGTATGGATTCATTAACAGAAAAAATTACAAATTACATTTCTGAA 	CAGAAGAAAGACCAGAGGGATTTTTTGGCAAAATCGGAAACAAAGTGGACTCTGTAAAA 	ATTTCTGTTGCCGGAGGAATTAATAAGGTTGGAAGTAAACCGAGTGAAGAAAACCGAAA	GTAACAGTAACTGCGGAATCTTTAGAAGTAGATGCAAAAACGACCGGAACAATCAACAGT
3GGCTGTTTCTGTCAATAA(3GGCTGTTTCTGTCAATAA(TIGCTIGCAGTGACGACGGGJ 	gagatatactaacgttaa: 	raggggctactgtgactgt raggggctactgtgactgt	NAGCGGACACCCAAGTGACI	ATRATACAGTAGCAGGAGA! NTAATACAGTAGCAGGAGA!	PATTGGGAACTTCTGCTTCT	RAGCAGCAGGAGCAGGTTTC RAGCAGCAGGAGCAGGTTTC	ntagtgatattcgaaatgco ntagtgatattcgaaatgco	YTTAGCTGGAGCGGCTGCT 	3CGGATCTGCTGCACTTCAC 	1GGGAGCAAATAAAAAGGT/ 1GGGAGCAAATAAAAAAGGT/	TTTCAATAATATTAAAAA 	\cgtttctcatactccgai \cgtttctcatactcccgai	CAGAAAAATTACAAATTAC 	NAATCGGAAACAAAGTGGA 	JAAGTAAACCGAGTGAAGA/ 	NTGCAAAAACGACCGGAAC <i>I</i>
GATTGACAAT 4320 	AGGGACAATT 4260 AGGGACAATT 4260	TCGAGCGGAC 4200 TCGAGCGGAC 4200	4. 4.	AGGAGCTTTA 4080 AGGAGCTTTA 4080	ATCTGAAAGC 4020 ATCTGAAAGC 4020	TATCAACTTA 3960 ATCAACTTA 3960	GAAGCAGTT 3900 GAAGCAGTT 3900	CAATAAATTT 3840 CAATAAATTT 3840	ГСТАААТААТ 3780 СТАААТААТ 3780		HGAGGTGACT 3660	3GAAACATCT 3600 3GAAACATCT 3600	TAAAGGACCG 3540 TAAAGGACCG 3540	CATTTCTGAA 3480 CATTTCTGAA 3480	CTCTGTAAAA 3420 CTCTGTAAAA 3420	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	AATCAACAGT 3300 NATCAACAGT 3300
- da	δ B δ	γ dd γ	Qy da	Qy	Db	Db	B &	S 89 55	95 Q	B &) B &	Db Qq	D QQ	p &) b 4) D 4) b 4
	5281 AATATTGGAAA 5281 AATATTGGAAA 5341 GATCAAGATAG	221	161	101	041	981 981	P +		–					2 2	4 2		
	AATA II TUGGAAAALAAI CAGIIA IAGUIA IIG KAAAAACAGI TAGAA II TUGGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	\text{\text{TGCGGAAATGCAAATGGAGGAAAAGGGCTGGAGTTGGAGCAACAGTTGCTCATACA}\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	GAGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAGATCAAAAAACAATAAATA	GGAGGAATGGTATCTGTCAATCGTGGTTCTGATGAAACGGAAGCTTTAGTTAG	GATTCTCATATTACAAACGTTTCTGCTGGAGGGGCTGCAAGTATTAAGCAGGCTGGAATC	GBACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGAAT G	GCGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTACA		AAIGACACGAITGCAAAGGIGGAIAAAGGAAGAATTICTGCTGAITCCTIAAAIGIGAACAACGAIGACACGAITGCAAAAGGAAAGAATTICTGCTGAITCCTTAAAIGTGAACAAAAAGGAAGAATTTCTGCTGAITCCTTAAAIGTGAACAAAAAAAAAA	CTTGCTATCAGCAAAGATGCTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCA	GCGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTTGT	AATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGGGAGGATAAAATTCAT	TCGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAGT	ANGSANCANC I MENDANANG CANAGANANANG ANG COGTON 1 OF I AMA 10 C MC 1 I I I I I I I I I I I I I I I I I I	ANGEL TARABATAT TALLA ANGEL CELESTAL LA CONCENSION LOS LA LA CARRENA ANGEL CELESTAL ANGEL CELEST	CCAAAGAT G : CAAAGGAAGTTCTGATCTTAGCAAAAGAATATCAGGCTTTACTAAATGA	GACGIOGARGE LAGUGI IGALARA ICII CUAL COMMOGACULA IGAMA ICAMA
		CGGCTGGAGTTGG	TAGATGCAAAAGA TAGATGCAAAAGA	CTGATGAAACGGA CTGATGAAACGGA	GAGGCGCTGCAAG	AGAATACAAAAGT(CTCTTCATAATAAA	TTGCGGGAACCATT	GAAGAATTTCTGCT	SANIGGAICIGA SAATGGGATCTGGA	CATCTACTGTTGTT CATCTACTGTTGTT CATCTACTGTTGTT	GCAATAAGGAAGCC	GAGGAGTAGCTATT		TATTAATACGACT	TAGCAAAAGAATA	CCATCGAAGGAGC
ACTA	GIAAAA GTAAAA	AGCAA	TCAAA	AGCTI AGCTI	TATTA	DAATG	A	0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 -	GATT	GCAT	GIGA GIGA	GGAG	GCAG	ATTG		TCAGG	TAATG

Oy 6301 CATTY Db 6301 CATTY Db 6301 CATTY Db 6361 GTTG Db 6361 GTTG Db 6421 AAGA Oy 6481 ACAG	6061 6121 6121 6181 6181 6241	Oy 5881 ATTACI Db 5881 ATTACI CY 5941 GCAGCI CY 6001 AAAGA' OY 6001 AAAGA' OY 6001 AAAGA' OY 6001 AAAGA'	5701 G 5701 G 5761 G 5761 G 5761 G	Qy 5461 TTGAA: Qy 5461 TTGAA: Qy 5461 TTGAA: Qy 5521 GAAAA: Qy 5521 GAAAA: Qy 5581 GTGGTG Qy 5581 GTGGTG Qy 5641 GTAGG:
TTGG	JAAAJ JAAAJ JAAAJ JAAAJ JIJI CTTTJ CTTTJ	ATTACAGAGTCTGATGCGTAATTGCTAATTATGCAGAACAGTGTCTCGAGTGGCCCCATTATTACAGAACAGTGTTCTCGAGTGGCCCCATTACTACAGAACAGTGTTCTGAATTATGCAGAACAGTGTTCTGAAGTGGCCCCATTACAGAGTCTTGAAATTGCTAAATTATGCAGGAACAGTGTTCTGGAATTGGCCCCCGCAGGAACAGTCTACCAAAAGCATATGCGCAATAGGAATTACAGAAAATTACAAAAAGCATATGTGCAAAAAGCATATGTGCAAAAAGCATAATGGAACAATATACAAAAAGCATATGTGCAAAAAGCATAATGGAACAATATATAT	GTACGAAATGCTTTGGTAAAAAGCAAATCTCATTCATCATTAAAACAATTGGAATTGGA 	CCAGIC GOAGI I CONTROLLE C
TGTAAATCAGGACATTACACGAATTCAATCGACTAGTAGTAGGTCTGTTGGT [TARAGTIGTAGATARAGTATTCAAAATCTTAATATTAACGAAGACTTATCACAA TARAAATAATAGTATAAAAAAGGATTTGTTACCAATAGTTCAGCACTACTCATACTTTA TARAAAATAAGTAATAAAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTA TARAAATAAGTAATAAAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTA TARAAATAAGTAATAAAAAAGGATTCAGGACAAGCCGAGTGGCAGGAACTGTTAAT TARAAATAAGTAATGCCGCTGGTTCAGGACAAGCCGAGTGGCAGGAACTGTTAAT TARATGGCAAATGCCGCTGGTTCAGGACAAGCCGAGTGGCAGGAACTGTTAAT TARATGGCAAATGCCGCTGGTTCAGGACAAGTCCTATATATAT		AAATCTCATTCATTAA	CGARGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCAAGTACTACAAAGAACAATACTTCAAAAAAAA
GCAGCCGGGGTA 65	AAGACTTATCACAA 61 CTACTCATACTTTA 61	GICIGAGIGGCCGI 5940 GICIGGAGIGGCCCGI 5940 GICIGGAGIGGCCCGI 5940 TACAAAAGCATAIGTA 6000 TACAAAAGCATAIGTA 6000 TACAAAAGCATAIGTA 6060 TACTACTCAAGGGCAA 6060 TACTACTCAAGGGCAA 6060 TACTACTCAAGGGCAA 6060		5700 5700 5700
5 B 5 B 5 B	0	7 Q D Q D	& B & B & B & B	D
7381 GATAGAGA 7441 GGAAAAAA 7441 GGAAAAAA 7441 GGAAAAAA 7501 GGAACTGG 1 7501 TCCGGAG7		6961 GTAAAAGE 7021 GCAGCAGT 7021 GCAGCAGT 7081 CACAATAA 7081 CACAATAA 7141 AAAAATATAT	6781 ACTCGAAA 6781 ACTCGAAA 6841 TCAGCCGG 6841 TCAGCCGG 6841 TCAGCCGG 6901 GCAAATAA 6901 GCAAATAA 6901 GCAAATAA	6481 ACAGCAGATTCTAAGCAAGATTTCCTCTTTTTGAGTCCAGAGTCGAGCAGCAGCAGCCCGGGTA 6541 GGAGCCGGAGTGCCAGGAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGAGAGTAGAT 6541 GGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGAGTAGAT 6601 GTGGAAGAACCAAACACTTTTGGTAAAAAAACCTTAAATCAAATTTGCAAGCAA
GATAGAGGAGATACTCAGGAGAAGGAATTAAAAGCCATTCTGAAAGACTTCTGATATTTTTTTT	GTCTTGGTAAATAATTTTGGAACAGCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGA	GTAAAAGCTTTAATAAATTTTCAGTTAACACTATAAATAGTTCTGGAGACCGCAGTCGAGTT GCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTT GCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTT GCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTT CACAATAACTCTGATTTTGACTTCCGTACGAGAAAAAGTAAATTGTAACGGCAAAAAGAGAGAG	ACTCGANACAGTTAGANGTATATRGCAGAAATCAGATRAGATRAGATRAGATRAGAT	ACAGCAGATTCTAAGCAAGAATTTCCTCTTTTTGGAGTCCGAGTCCGAGCAGACTAAAATTATGGAGTCCGAGTTCCTAAAATTAAATTTTGGAGTCCGAGTTCCGGAGTTAAATTAAATTTTGGAGTCCGGAGTTAAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAG
AGAAGGAATTAAA AACAGAAGAACAAA AACAGAAGAACAAA AACAGAAGAACAAA CAGAACAAACA	AACAGCTGTAGAA	TTCGTACACT TTCTGTTAACACT TTCTGTTAACACT TTCTGTTAACACT TTCCGTACGAGAA TTCCGTACGAGAA TTCCGTACGAGAGAA TTCCGTACGAGAGAA TTCCGTACGAGAGAATGCAGGA	ANTAGCAGAAAI ANTAGCAGAAAI ANTAGCAGAAAI ANTAGCAGAAAI ANTAGCAGAGAAI ANTAGCAGCCGAGTA ANTAGCAGCCGAGTAGT ANTAGATCATAGT ANTAGATCATAGT ANTAGATCATAGT ANTAGATCATAGT ANTAGATCATAGT	ATTICCTITITE CGTTTCCGTAAAT
AGCCATTGTGAAAAAAGCAGTGGCAGTTACAC	AGATAGAAAAA 	HOLD CONTROL OF THE PROPERTY O	GAGATAAAATC	GGAGTTCGAGT
GACTTCTGATAT TTCTACTGGTGG TTCTACTGGTGG TTCTACTGGTGG AAATATTAAAAG	TICTGAAGGAAA	AGGAGCCGCAGG		CCAGCACCGGA CAGAAGACCGGAAGTI LILILIA LIAGACCGTATAGGI LILILIA LIAGACCGTATAGGI LILILIA LILILIA LICAGACTTATAGGAGGI LILILIA LICAGACTTGGAGGI LICAGAGGI
_> >—> H—H H—		ი—ი ი—ი ≥—> H-	<i></i> 00	

9721 AAATGA 9726 9721 AAATGA 9726	da As	8641 AAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACA 8700 	` 문 왕
661 TCTTCTGAAAAAGCATACAAAAAATTGACATATCAATCAA	, B &	8581 TTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCT 8640	8 &
CONTROL CONT	S B 4	8521 TTAGCGGTAGCCGGTGTGCATGCACAAGGAACAAAGCATTTACGAGATCAAACAAG 8580	P &
541	S B 8	8461 ATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCT 8520 	B 8
481 GCCAAAAGTCATGCTGCAGCTGCTTCGGCACTTGCACACTTGAAAAAATGAAGTAAAAA) B &	8401 GAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAAA	g &
TATGCCGGATATGATAAAAATTATAAATATAGAGAGAAATTCTAAGGCTATTGCGGAT	B 8	8341 GAAATGGAGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACT 8400	B 8
361 AATAGAACTAATAAIGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTA 	Db Db	8281 ATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCA 8340	₽ . Q
301 GGGGTGGCTGAAGCAAGAGGTGCAAGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA	Db G	8221 GGTAAAACTATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCA 8280	용 성
241 AAAARITCAAAAARIAATACITTAGCATCAAGTAGTAGTAGTAGTAGTAGTAGTAGTAGTAATCCAATGTAATGTTCAT 241 AAAAATTCAAAAAATAATATTACTTTAGCATCAAGTAGTAGTGAATGTGAATGTTCAT 241 AAAAATTCAAAAAATAATATTACTTTAGCATCAAGTAGTAGTGAATGTGAATGTTCAT	}	8161 GCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCA 8220	g 49
181 TCCARTGAGATGGATATTAAAAATTTGGCAAAGCAGTATGATCTTCTCAATTAATAACCTTCTCCAATTAATAACCTTCCCAATTAATAA) B S	8101 CATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAA 8160 	B &
121 GTAAATATICTIGGAAAAGGAGAGGTGCAGCTGCAGCTGCAATATICGAATGTACACATT [?	8041 GCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTT 8100 	g 99
ASACATECTATESTANA CIACI SEMANACANEMIA CAMENTI LA CAMENCACA CARCANIA CAMENTA CA	D 69	7981 ACTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAA 8040	B 8
OUI GEIRIIGEMANIEIIGA IGIAMAILANIEICAI IRAGAMARIEICANA IGIAMAILA I	?	7921 AGCCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTG 7980 	g &
941 GATIGUTTIGAATIGAACITIGATGIAGATCIACAAGGAAAAAGGTIGGTIGGIAATGATIGGTIGGAATT 	?	7861 GAAATGAATTCAGAGGTTGAAATTGAGAAGAATATTTCAATGAAGAAAATAGAGTAACT 7920 	B &
BBI GAAACAAAICAICATIGAAGAIAAAGCCAGAAITGIIGAAACCGAAACGGAAACGGAAACGGAAACGGAAACGGAAACGGAAACGGAAACGGAAACGGAAACGGAAACGGAAACGGAAACGAAAAAGAAAAAA) B &	7801 GCAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAAT 7860	B &
821 GAACCAAAGGAGGTCTTGTCGGAAAGAATGCTATTTCTGTGAAAAAATACAATTTCAGGG 	S & &	7741 AAGCTATTAGGAAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAA 7800 	B 8
ATTOGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTAAAAGAGACGAGGAGACGAAGAGAGACGATTGCAAGAGATAAATACGATTGTAAGAGATAAATACGATTGCAAGAGACGATTGTAAGAGATAAATACGATTGTAAGAGACGAGAGACGACGAGAGACGAGAGAGA	D 4	7681 GGAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCT 7740	dg VQ
701 GCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAA	}	7621 GATATTACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATA 7680 	B 8
8701 GCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAA 8760		13	Дb

```
á
                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 3
US-09-841-786-15
                                                                                                      밁
                                                                                                                                δ
                                                                                                                                                  멍
                                                                                                                                                                            ફ
                                                                                                                                                                                                           문
                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                              밁
                           S
                                                         밁
                                                                           S
           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: RECOMBINANT FUSOBACTERIUM NECROPHORUM LEUKOTOXIN TITLE OF INVENTION: VACCINE AND PREPARATION THEREOF FILE REFERENCE: 30296
CURRENT APPLICATION NUMBER: US/09/841,786
CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/558,257
PRIOR APPLICATION NUMBER: 09/558,257
PRIOR FILING DATE: 2000-04-25
NUMBER OF SEQ ID NOS: 15
SOPTWARE: Patentin Ver. 2.1
SEQ ID NO 15
LENGTH: 11130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 15, Application Upatent No. US20020054883A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 9726; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
ORGANISM: Fusobacterium necrophorum
-09-841-786-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: NAGARAJA, T. G.
APPLICANT: STEWART, GEORGE C.
APPLICANT: NARAYANAN, SANJEEV
APPLICANT: CHENGAPPA, M. M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1034
                                                                                                                                                                                                                                                                                                                                                                1214
                                                                                                                                                                                                                                                                                                                                                                                                                  1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1094
           1634
                                                          1574
                                                                                                           1514
                                                                                                                                                           1454
                                                                                                                                                                                                            1394
                                                                                                                                                                                                                                                              1334
                                                                                                                                                                                                                                                                                                               1274
                                                                                                                                    481
                                                                                                                                                                                   421
                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                   601
                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACTTTGTCAATGGAAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA
                                                                                                                                                                                                                                                                                                                                                                             ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                             ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAGGATAATGTTTATGACATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                                           GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA
                                                                                                                                                                                   ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAAACAAGATGATTTTAAGAAGGCTTTG 480
                                                                                                                                                                                                                      ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT
                                                                                                                                                                                                                                                               AACTTTGTCAATGGAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA
                                                                                                                                                                                                                                                                                                               AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT
                                                                                                                                                                                                                                                                                                                            AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT
                                                                                                                                                                                                                                                                                                                                                                 ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                   ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAGGATAATGTTTATGACATTACT
                      ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT
                                                                         ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAAATCAATGCTGTTGAAGGC
                                                                                                           GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTTAAAA
                                                                                                                                                           ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG
           ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT
                                                          ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Application US/09841786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 9726; ilarity 100.0%; Pred. No. 0; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 11130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>,</u>
                                                                                                            1573
                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 1093
                                                                                                                                                              1513
                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                1393
                                                                                                                                                                                                                                                                                                                 1333
                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                 1273
                                                                                                                                                                                                                                                                                                                                                                                                                   1213
                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1153
                                                                                                                                     540
                                                                                                                                                                                                              1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
           1693
                                                            1633
                                    660
                                                                                   600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                 밁
                                         á
                                                                        밁
                                                                                         Ş
                                                                                                                   밁
                                                                                                                                        Ş
                                                                                                                                                                       문
                                                                                                                                                                                           S
                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                             성 유
                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1694
                                                                                                                                                                          2534
                                                                                                                                                                                                 1501
                                                                                                                                                                                                                         2474
                                                                                                                                                                                                                                                   1441
                                                                                                                                                                                                                                                                            2414
                                                                                                                                                                                                                                                                                                    1381
                                                                                                                                                                                                                                                                                                                            2354
                                                                                                                                                                                                                                                                                                                                                       1321
                                                                                                                                                                                                                                                                                                                                                                                2294
                                                                                                                                                                                                                                                                                                                                                                                                      1261
                                                                                                                                                                                                                                                                                                                                                                                                                               2234
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1814
 1741
                                               1681
                                                                                                1621
                                                                                                                        2594
                                                                                                                                                 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661
                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGCAACAGAAGGAAAGGCAAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCT 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAGTAAAATCGAAGGGAAGAGAGAGATATTACTTCAAAATCTGAAAATACTATTGATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGATTTTTAGGTTTATTGACAAGTAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCCTATCAATTTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGCTTGCAAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCCTATCAATTTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAATAGAAGAATATGTAAAAGGA
                                                                                      TTGGGGGATAGTGGTAATGGGGTTGTGGCTGCAAATATTTCTAACTATAATGCTTCCTCC
                                                                                                                                                                       GAAGGAGAAAATAAATCTTCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACG
                                                                                                                                                                                        GAAGGAGAAATAAATCTTCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACG
                                                                                                                                                                                                                            TCTGTTTCTGTTGGAACGATGAGAGATTCCAATAAAGTAGCTCTTTCAGTATTGGTGACG
                                                                                                                                                                                                                                         TCTGTTTCTGTTGGAACGATGAGAGATTCCAATAAAGTAGCTCTTTCAGTATTGGTGACG
                                                                                                                                                                                                                                                                             GAAGTAAAATCGAAGGGAAGAGAGATATTACTTCAAAATCTGAAAATACTATTGATGCT
                                                                                                                                                                                                                                                                                                                                           CTCAGTATCGGAGCGGGATATATTTTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                GCAGCTACTTCTCCATTAAAAATTACCAATTTATATTTGGAGAAAGCCAATGGAAAACTT
                                                                                                                                                                                                                                                                                                                                                                                             GCAGCTACTTCTCCATTAAAAATTACCAATTTATATTTGGAGAAAGCCAATGGAAAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGATTTTTAGGTTTATTGACAAGTAAGTCCAGTGTCGTTATTGGAAAAAGATGCCAAAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGGAAAAAGAAACTTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAAATT</u>
ATTACTAAAAATAGTGTTCTGCAAACAGGATCTGATTTGGGAACTTCCAAGTTTATGAAT 1800
                                    CGTATAGATGTAGATGGATATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAAC
                                                                        TTGGGGGATAGTGGTAATGGGGTTGTGGCTGCAAATATTTCTAACTATAATGCTTCCTCC
                                                                                                                                                                                                                                                                                                                              CTCAGTATCGGAGCGGGATATATTTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGA
                        CGTATAGATGTAGATGGATATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAAC
                                                   1740
                                                                                                                                                                                                                                                                                                                                                         1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    840
                                                                                                                                                                                                                                                                                                                                                                                                        1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1813
                                                                                                                                                     1620
                                                                                                                                                                                                                                                      1500
                                                                                                                                                                                                                                                                                                      1440
                                                                                                                                                                                                                                                                                                                                2413
                                                                                                                                                                                                                                                                                                                                                                                                                                   2293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                900
                                                                           2713
                                                                                                   1680
                                                                                                                           2653
                                                                                                                                                                            2593
                                                                                                                                                                                                    1560
                                                                                                                                                                                                                              2533
                                                                                                                                                                                                                                                                               2473
                                                                                                                                                                                                                                                                                                                                                                                  2353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2233
```

OY 3901 AAAGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTA
Qy 3841 AAAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGAGCAGGTTTGGAAGCAGTT
QY 3781 ATTCAAAGTAAAAGAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTT
OY 3721 ATTGGAAGTGGAAATTAGCAACATCAGTGCTGGTTTAGCTGGAGCGGCTGCTGTAAATAAT
QY 3601 GCTCTCGTAGATGGAGTAAAGATAAATTTGAAGGGAGCAAATAAAAAGGTAGAGTGACT
14x 1
QY 3421 AATAAAATTACGGATAGTATGGATTCATTAACAGAAAAAATTACAATTTCTGAA
Qy 3301 Db 433
Qy 3241 Db 4274
Qy 3181 Db 4214
Db 4094
. w

4861 GCAAATAATTCCATTCTTGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTCTACG 4920	5714 GCGAAACATGTAAATGTGGAAGCCAAAATCATCTACTGTTGTTGTGGAATGCGGCTTCTGGA 5773 4741 CTTGCTATCAGCAAAGATGTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCA 4800	561 GCGAAACATGTAAATGTGGAGGCAAAATCATTACTGTTGGAGGA 474 681 GCGAAACATGTAAAATGCGCAAAATCATTGCAGTCAATACTGTTAAA 462	5414 GCCAAAGATGTCAAAGGAAGTTCTGATCTAGCAAAGAATATCAGGCTTTACTAAATGGA 5473 4441 AAAGATAAAAAATATTTAGAAGATCGTGGTGTATTAATACGACTGGAAATGGTTATTATACG 4500	-2 5 <u>-5</u>	CARCADAGTADATICCTTCTATTAGTGGTGGGAGGAGATATACTADACGTTATCGAGCGGAC 42 []	1 GTGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGC 4
6 7 6 7 6 6	Qy 5821 AATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGTCGGAGTT 5880	5641 GTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAATAGTACTCAAAAT (5521 GADANTAATGGADANTAAGGADAAGGCADANTGTTDANTGTTCTAGCTGADAANTACGAGTCAD	Db 6374 GATCAAGATAGAAAAATTCAAAGGAGCCTCTGTGCAAAGATTTAGAGGAACTCACC 5460 Qy 5401 GCAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACC 5460 Qy 6404 GCAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACC 6493 Db 6434 GCAGTCGGAGTTGGAAGAGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACC 6493 Qy 5461 TTGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAA 5520 Db 6494 TTGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAA 6553	5221 A 6254 A 5281 A 6314 A	Qy 5041 GATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAATC Db 6074 GATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAATC 6133 Qy 5101 GGAGGAATGGTATCTGTCAATCGTGGTTCTGATGAAACGAAGCTTTAGGTAGTGATTCT 5160 Db 6134 GGAGGAATGGTATCTGTCAATCGTGGTTCTGATGAAACGAAACGTTTAGTTAG

음 성 음 성

`		,			• •			• •						•	• •			•
7201 GTCTTGGTAAATAATTTTGGAACAGCTGTAGAAGATAGAAAAAATTCTGAAGGAAAAAGGA 7260	7141 AAAAATATTAAGCAAACAGCAGCAAATGCAGGAAGTCGGAGGAGCAATCGGAGCCAAT 7200	7081 CACARTAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAA 7140	7021 GCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTT 7080	6961 GTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTT 7020	6901 GCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCTTCTACTGATGTAAAT 6960 	6841 TCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATT 6900	6781 ACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGT 6840	6721 GTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGAAAAATTCTAAAATTATG 6780	6661 GTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCA 6720	6601 GTGGAAGAAGCAAAGATTTTGGTAAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCT 6660	6541 GGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGAT 6600	6481 ACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCAGCAGCCGGGGTA 6540	л н—н	6361 GTTGGTGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATATTATAAAAGAAATACC 6420	6301 CATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGT 6360	6241 ATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGGAAAA 6300	6181 AAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAAT 6240	
D Qq	B 5	S S S	P &	B &	B &	g &	B &	D 2	, g &	ος 12	p &	B 8	₽ <i>Q</i>	g 42) B &	8 8 8	ם מ	₹ B
8281 ATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCA 8340	GGTNAAACTATGGTAGAAGTTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCA	GCAGTACAGGTTCTGTATTGGGAGGAGGTTGGAGTCACCAGGCAGAAGCTACTGCTGCAGAGCTTACAGCTACAGCTAACAGCTACTGCTGCAGAAGCTACTGCTGCAGAAGCTACTGCTGCAGAAGCTACTGCTGCAGAAAGCTACTGCTGCAGAAAGCTACTGCTGCAGAAAGCTACTGCTGCAGAAAGCTACTGCTGCAGAAAGCTACTGCTGCA	CATGCAGATPATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAA	GCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTT 	ACTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAA	AGCCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAGAAAACAAGAGTG	GAAATGAAITCAGAGGITGAAAITGAGAAGAAGATAITTTCAATGAAGAAAAITAGAGTAACTAITIIIIIIIIII	GCAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAAT 	AAGCTATTAGGAAAAATATTGAGTGTAATGTAAAAGATAAATGGGAATTGAGAGCGGAA	GARGETGCETATGCAGAATTAAATTETAATGGAAGATCAAATATEAGTATTAAAAATTET 	GRIATTACAGGAAATGITGCTTTAACAGCATATCAAGGTCCTGTAAGAGCATTGGAAATA	TCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAGTAAATGTTAGATCG	GGAACTGCAGGTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAAT [GGAAAAATGIRGATATTACAACAGAGGACAAGAATAATATCACTTCIACTGGIGGTTTG GGAAAAAATGIRAGTATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTG	GATRAGGGGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAGACTTCTGATATTATT GATRAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATT GATRAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATT		ACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAAGTAAAATGAT	8234 GTCTTGGTAAATAATTTTTGGAACAGCTGTAGAAGATAGAAAAAAATTCTGAAGGAAAAAAGGA 8293

10334 GGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA 9361 AATAGAACTAATAATGTTGATTTAGCAGGAAAATTAAAACAGAGGGAAACATCAATGTA	4 12 0 1	9181 TCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACC	9121 GTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATT	9061 AGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAA 	9001 GGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGA	8941 GATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATT 	8881 GAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTA 	8821 GGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGG	8761 ATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGAC	8701 GCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAA [8641 AAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACA	8581 TTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCT	8521 TTAGCGGTAGCCGGTGTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAG	8461 ATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAGAATGAAGCGAATATAGAATCT	8401 GAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATAT 	93/4 GGARAIGGAGGAGIAGIGCCGGAGCAGGAGIGAAIACIICIACAGCACAGAGIAAIACI
10	930 103 936	924 102	ATATCGAATGTACACATT 9180 ATATCGAATGTACACATT 10213	AGCATTTACAAGAGCAAAA 9120 AGCATTTACAAGAGCAAAA 10153	GTAGAAGCCAAAATCGGA 9060 	GGTGGCTATGGTGGAATT 9000 	ACCGGAAGTGTAAATGTA 8940 ACCGGAAGTGTAAATGTA 9973	HAAAATACAATTTCAGGG 8880 	GTAAGAGTCAACGGAGAC 8820 GTAAGAGTCAACGGAGAC 9853	GTTGCAGGAAATTGGGAA 8760 GTTGCAGGAAATTGGGAA 9793	TTAGTCGGAGCGGAAACA 8700	CGTGCAAAAGCTTTGGCT 8640 CGTGCAAAAGCTTTGGCT 9673	TTTACGAGATCAAACAAG 8580 TTTACGAGATCAAACAAG 9613	GAAGCGAATATAGAATCT 8520 GAAGCGAATATAGAATCT 9553	GATTACACAAAAAAATAT 8460 	ALAGLALAANGIAAIACI 5433

음 성 음

& &

8 8 8 8 8 8 8 8 8

8 8 8 8 8 8 8

8 8 8 8

8 8 8 8

5 2 5

밁

음. 원

```
Ś
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             THE REPERENCE: PCT-30962
CURRENT APPLICATION NUMBER: US/10/647,057
CURRENT FILING DATE: 2003-08-22
SUMBER OF SEQ ID NOS: 15
SOFTWARE: PALENTIN VERSION 3.0
30 ID NO 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ILT 4
.057-15
.0-647-057-15
.0-647-057-15
.0-647-057-15
.0-647-057
.0-647-057-15
.0-647-057
.0-647-057
.0-647-057
.0-647-057
.0-647-057
.0-647-057
.0-647-057
.0-647-057
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-067
.0-647-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; 9
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
100.0%; 1
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
ORGANISM: Fusobacterium necrophorum
.0-647-057-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PPLICANT: NARAYANAN, SANJEEV
PPLICANT: CHENGAPPA, M.
ITLE OF INVENTION: RECOMBINANT FUSOBACTERIUM NECROPHORUM LEUKOTOXIN VACCINE AND PREP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 11130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9661
                                                                                                                                                                                                                                                                                                         1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1094
                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAAT 9600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTATGACATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGAGATATCAGATTCTAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAATGA 9726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCAT 9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAAT 10633
     AACTTTGTCAATGGAAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA 360
                                                                                                        AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT
                                                                                                                                                                                                                                                                                                                                                                  ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAATGA 10759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT
                                                                                                                                                                                                                                                                                                              ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 9726;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 11130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10753
                                                                                                                                                                                                                                                                                                                        1273
                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                  1333
                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

\$	P 6	d d	g Qy	B &	B &	Q Q	р У	<u> </u>	g Q	8 8	당 왕	용 성	용 &	유 성	B 8	dg VQ	B 8	Dβ
1381 GAAGTAAAATCGAAGGGAAGAGCAGATATTACTTCAAAATCTGAAAATACTATTGATGCT 1440	1321 CTCAGTATCOGAGCOGGATATATTTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGA 1380	1261 GCAGCTACTTCTCCATTAAAAATTACCAATTTATATTTGGAGAAAAGCCAATGGAAAACTT 1320 	1201 GAAGCAACAGAAGGAAAGGCAAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGA 1260 		1081 AAGCTTGCAAAGCACTCTTTTAGCTTTTGTTACAGGTTCTATTTTCTCCTATCAATTTAAAT 1140 	1021 GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTAG	961 ACTCCTTTAAGTTTATCAGATGTGGAAGCTTCCGTAAGAGTAAATAAA	901 AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGAGAGAAAAGAAAGTTATAAC 960 	841 AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT 900 	781 CAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA 840	721 TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCCT 780	661 ACAGATTITAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT 720	601 ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT 660	541 ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC 600	481 GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA 540	421 ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG 480	361 ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT 420	
	· · · · · · · · · · · · · · · · · · ·	 .																
В 2 У	B 5	?	? B &	B 8	용 성	g &	B 8	D 49	\$ B &	B &) b Q	g 4	p 9	B &	B &	?	? 문	& &
2461 ARCTATGTTCAGGGAGAAATGAAAAAATTAGAGGAAAAATTACCGAAAGGATTTAAAGCT 2520	401 AGAALGACAATTATTCTTCCGGATGGAACTTCAAAAACAGGAACTGCTATAGAAATTGCA 434 AGAATGACAATTATTCTTCCGGATGGAACTTCAAAAACAGGAACTGCTATAGAAATTGCA	371 1141104A10C41111CAGAAAAA111UGAACAACCGGACCIIITACIAAA10G19AA	281 TTTGGAAAAGAAACGAAAACTCCAGAATATGAATCCGAAAGATATTGAATCTGATTGAAAAA	AAAAATCCTTCAAAAATGGCAAAGTCTGTTATTGATAAATTAGAACTTTTAAAGAGAGCT 	2161 CATGCTGAATTGGTATCGGAAGGAAAAATTGATATCAACAGTGAAAATAAAATTGAATAT 2220	101 GGAAATGCAGCAGTTTTTATGGAAACTATAAAATAATGCTTCTGGTGACAATTGCCGAT	041 CGAGCGACTACGTCAAGTGGAAGTGTGCCTGTACGAAAGGAAGAAAAAAAA	981 AGAC II CII CAGGAG I GGAAAGGGAGIAA I GIAAGGGCA I AAAA I GAAGC I CAAAAA I CII AAAA I GAAGAAAAAAAAAA	GIGICIGCAACCA IAGCAAAICA IAAIIAA IIC IGCIIIC IGIGGCAA IAGCAAAAAICA IGAACAA IAAAIIC IGCIIIC IGIGGCAA IAGCAAAAAAA ICAAAAICA IAAAIICA IGAACAAAAAAAAAA	GEAGGARGACAG TETCAAT GAGGARAT RAANGAR XANGC XANGC XANCC XANC	GATCAGGTTTATGAATCAGGTCATCTAAAATCAATTTTAGATGAGTAATAAACAGGGGTTT	ATTACTAAAATAGIGTTCIGCAAACAGAICIGATITIGGAACTTCCAAGITTA IGAAT	GTATAGATGTAGATGGATATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAAC 	TIGGGGGATAGIGGIAAIGGGTIGIGGCIGCAAATAITICTAACTATAAIGCTTCCTCC	GRIGA ISLAMA ISLIGNAMASI ISMASICANI I NALI CICALI I CIGALE ISLIGNAMASI ISMASI ISMASI ISMASI ISMASI ISMASI ISMASI ISMASI ISMASI ISMASI I CICALI I CIGALE ISCILI ISLIGI ISLIGI ISMASI ISMA	SOLD SANGENSTANDALIAN SOLD SOLD		2414 GAAGTAAAATCGAAGGGAAGAGCAGATATTACTTCAAAATCTGAAAATACTATTGATGCT 2473

Ü				•		•												
AGTTTG	41 TCTTTCAGTTTGGGAGCTTCTGGAAGTGTTTCTTTCAATAATATTAAAAAGGAAACATCT 36	3481 GGAGTAAAAAAAGCGGGGAATCTTCCTTCGAACGTTTCTCATACTCCCGATAAAGGACCG 3540	3421 AATAAAATTACGGATAGTATGGATTCATTAACAGAAAAAATTACAAATTACATTTCTGAA 3480 	3361 TCAGAAGAAAGACCAGAGGGATTTTTTGGCAAAATCGGAAACAAAGTGGACTCTGTAAAA 3420 	3301 ATTTCTGTTGCCGGAGGAATTAATAAGGTTGGAAGTAAACCGAGTGAAGAAAAACCGAAA 3360 	3241 GTAACAGTAACTGCGGAATCTTTAGAAGTAGATGCAAAAACGACCGGAACAATCAACAGT 3300 	3181 GCTTCCATTGAAGATAATGACGAACGACAAAGTAAATATGATAAGAATAAAGATGATGAA 3240	3121 ACGAAAAATGCGGCGGTCGGGGTTGCTGTTGCGGTAAATGATTATGATATTTCAAACAAA	3061 GCTTTAAACAGTAAGAATGATACTTCTGTTTGGAATGCTGCCGGTTCAGCGGGAATCGGA 3120 	001 ATCAGI	2941 TCTTTTAATGGTGGCTCAGGTGGGAATGCAATCAATGGAATGGGAAGTTATAGTGGAGGT 3000	881 GAATTATCAGGAGAAAATATTAATGCAGATGCATTGAACAGACTTTTTCATGTAGCGGGA 2	GGAAGATTAAATGTTCAAAGATCGAAAAATTCAGCTATCGTAGAAGCTAAAGAAAAAGCT 	2761 GTGAAITTAGITGGAAATATTGGACTTGCGAGAAGCAGTACATCCCGGAAGTGCAGTCGGA 2820	2701 GGAGCTAAACTTGCTGCAAAAAAAGATTTAAATATAAAAGCTATCAATAAAGCAGAAAAA 2760 	GTGGGAGGAGCTGTTTCGTGGGTAGAACAGGAGAATTATAGCAAGGTATCCGTTGGAAAA 27	81 TATGCAAATTTTCACACTTTTACCTCTTCCGGAGCTAATGGAGAAAGAGATGTTTCTTCT 26	2521 TTTTCAGAAGGATTGAGTGGACTGATTAAAGAAACTTTGAATTTTACAGGAGTAGGAAAT 2580
ঠ	용 성	B 5	?	}	§ ₽ \$	S B 7	? 문 .	S B 7	S B 8	. B &	용 성	, B &	유 성	B 6	B 8) 유 성	유 성	B &
4681 GCGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTGGA 4740	4621 AATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTCAT 4680 	94 TCGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAA		ADAGGABAGAAATATTTAGAAGABABABAGAGAGGGGTCATTGTAAATGCTTGTTTA							CAAAAARIGARIGTIGARIGTICACTICTITATICAAGCUGACACCCCAAGTIGACAGGACTITA	GTGAACATTGAGGTTTCTGCAAAATCAGAAATAATACAGTAGCAGGAGAATCTGAAAGC [AAAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTT AAAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTT AAAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTT	ATTCAAACTAAACAAGTGCTTTGGTTAAAAATACGTGATATTCGAAATGCCAATAAATTTTATTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTTCGAAATGCCAATAAATTTT	1 ATTGGAAGTGGAAATAGCAACAATCAGTGCTGGTTTAGCTGGAGCGGCTGCTGTAAATAAT	3661 TCTTCTGATTCTACTTTTGTTGGAGCATGGGGCGGATCTGCTGCACTTCAGTGGAATCAT 3720 	3601 GCTGTCGTAGATGGAGTAAAGATAAATTTGAAGGGAGCAAATAAAAAGGTAGAGGTGACT 3660

B Q B Q B Q B Q B B

6841 TCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATT 8900		5761 GCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTA 5820	8
ACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGTACTCGGAATCAGATAAAATCAGGTACTGGAATCGGTACTGAATGAGATGAAAATCAGGTACTGGAATCGGTACTGGAATCGGTACTGAATGAGATGAAAATCAGGTACTGGAATCGGTACTGAATGAGATGAAAATCAGGTACTGGAATCGGTACTGAATGAGATGAAAATCAGGTACTGGAATCGGTACTGAATGAGATGAAAATCAGGTACTGGAATCGGTACTGAATGAGATGAAAATCAGGTACTGGAATCGGTACTGAATGAA	B &	5701 GTACGAAATGCTTTGGTAAAAAGCAAATCTCATTCATCTATTAAAACAATTGGAATTGGA 5760	유 성
) B &	5641 GTAGCAGTTAATAAATTTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAAAT 5700 	gg Qg
GTTGCAATTGCAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCGGGAATTGGAGCAGCAGCAGTAGTGGAGTGGCTGGAATTGGAGCAGCAGTAGTAGTAGTAGTAGTAGTAGTAGTAGTAGTAGTAGTA	S & &	5581 GTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGA 5640	D 99
GTGGAAGAGCAAAGATTTTGGTAAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCT	, p &	5521 GAAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAA 5580	B 8
GGAGCCGGAGTGGCAGAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGAT	B &	5461 TTGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAA 5520	B &
ACAGCAGATTCTAAGCAAGAATTTCCTCTTTTGAAGTCGGAGTCGCAGCAGCAGGAGTAGAACCAGGAGTAGAACCAGGAGTAGAACCAGGAGTAGAACCAGGAGTAGAACAGAACAACAACAAAAAAAA) B Q	5401 GCAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACC 5460	B 성
6421 AAGACAAGAGTTGGAAAACTACAATGTCTGATGAAGGTTTCGGAGAAGCAGCTGAAATT 6480	- B 64	5341 GATCAAGATAGAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATA 5400	B 8
TITUS GAMATIC LAGGAGE LI CII CIGATA CAATA I A LAAAAAAAAAAA AA AA AA AA AA AA AA AA	B 4	5281 AATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAAACAGTAAAATTACAACGGCGAAT 5340	B 8
CATTATTCTGTAAAATCAGAGAGATTACAGGAATTCAATCGAGTAGTAGGTTCTGTTGGT [? ₽ \$	5221 ATTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACA 5280	g 9
ATCAKCANGGITA IGAGGAAAKCAGAAKCICIIGIAKAAAATIC CATAIA AAA IGAAAAAAAATICAAAAAAAAAAAAAAAAAAAAAAAAAAA	}	5161 GAGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAGATCAAAAAACAATAAATA	g <i>Q</i>
7214 AAATCITTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAAT 7273	S B &	5101 GGAGGAATGGTATCTGTCAATCGTGGTTCTGATGAAACGGAAGCTTTAGTTAG	g Q
ANAMASANAA INGINA MANAMASANI INGINA MANAMASANI INGINA MANAMASANI INGINA MANAMASANI INGINA MANAMASANI INGINI MANAMASANI INGINI MANAMASANI INGINI MANAMASANI INGINI MANAMASANI MANAMANI MANAMASANI MANAMASANI MANAMASANI MANAMASANI MANAMASANI MANAMANI MANAMASANI MANAMASANI MANAMASANI MANAMASANI MANAMANI MANAMASAN) B &	5041 GATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAATC 5100	pb Qy
GTAGATIAAAGTAGTAGTAAAGTATTCAAAAATCTTATAATATTAAACAAAC	? B &	4981 GGAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGAAT 5040	Db Qy
AAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTATATTACTACTCAAGGGCAA) B &	4921 GCGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTACA 4980 	유 성
CCAGCANIAGENCE I CARCCAGIGIGANI I ACAGIGIGA I IACAANAGEA I I III I I I I I I I I I I I I I I I	S B &	4861 GCAAATAATTCCATTCTTGGGGTGAATGTTGCGGGGAACCATTGCCGGTTCTCTTTCTACG 4920	g 8
ATTACAGAGIC GALIGOGGIAATIGCIAATIA GAAGAACAGIGIGIGIGIGIGIGIGIGIGIGIGIGIGIGI	S B &	4801 AATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGAAC 4860 	B 8
	} D 4	4741 CTTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCA 4800	B &
6794 GCTQGAGTTQGAGCTQGAGGAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTA 6853	O B		В

9 9 9 9 9 9 9 9 9 9 9 9 9

8954 AGCCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTG 9013	GAAATGAATTCAGAGGTTGAAATTGAGAAGAGTATTTTCAATGAAGAAAAATAGAGTAACT AGCCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAAAA	B34 GCAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGAAAATAGAGTAACT 7 861 GAAATGAATTCAGAGGTTGAAATTGAGAAGAAAATTGAAGAAAAATAGAGTAACT 7	1 GCAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATTCAAAAAGCAAAGAAT 7	n -1 0	GAAGCTGCCTATTGCAGAATTAAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCT		GAACTGCAGGTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAA 83 TCCGGAGGTTACTGTTGAAAATTCTTTTGTGAAAAGCAGCTGAAAAAGTAAATGTTAGATCG 76	GGAACTGCAGGTCTTGCCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAAT 75		GCTACGAMAMAMATCITACAATCAGGAAATTAAAGCCATTGTGAAGACTTCTGATATTATT 7	* ACAGANG I I I IANAMAK I I IAGACGANG I IARCANAGANG ACAGANA ANAMAK I I IAGACGANG I IAGACANG	GICTIGGIAMATAATITIGGAACAGCIGIAGAAGATAAAAAATAATICIGAAAGAACAAAAAAAAAA	~— ~ <i>C</i>	CACAATAACTCIGATTIGACTTCCGTACGAGAAAAGGTAAATGTAACGGCAAAAAGAATAATATTAAGGAACAGCAAATGGAGCAAATGGAAGGAA	081 CACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATGTAACGGCAAAAGGAA	94 GIAMAAGCICIIAAIAAAAIIICGAAIICCIIGACAGCCGGGGGGGG	GCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCTTCTACTGATGTAAAT GTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTT [01 GCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCTTCTACTGTAATGTAAAT 69
8	유	Db Qy	D Qy	D Qy	Qy	g Q	Db Qy	do do	B &	B OA	DB QV	D Qy	D Qy	₽ Q	g Qy	Db Qy	ДУ	Qy
9061 AGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAA 9120	9001 GGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGAAGCCAAAATCGGA 9060 	8941 GATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATT 9000 	8881 GAAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTA 8940 	821 GGAACCA 854 GGAACCA	761 ATTGGAG 794 ATTGGAG	1 GCAGCCG 4 GCAGCCG	8641 AAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACA 8700 	8581 TTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCT 8640	8521 TTAGCGGTAGCCGGTGTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAG 8580 	8461 ATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCT 8520 	8401 GAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATAT 8460 	8341 GGAAATGGAGGAGAATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACT 8400 	8281 ATTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCA 8340 	8221 GGTAAAACTATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCA 8280 	8161 GCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCA 8220		8041 GCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTT 8100 	7981 ACTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAA 8040

8 8 8 8 8 8 8

B 성 B 성

1939 AATCATAATAATTCTGCTTCTGTGGCAATAGGAGAGAGTGGAAGACTTTCTTCAGGAGTG 1998	δ	Query Match	_ (
1879 GAGGAAATAAAGAATAAGCTAACGAACTTATTTAGTGTCGGTGTGTGT	עץ ממ	TYPE: DN ORGANISM	g: :
1819 GGTCATCTAAAATCAATTTTAGATGCAATAAAACAGCGGTTTGGAGGAGACAGTGTCAAT 1878 	da Vo	PRIOR FILING DATE: 2000-04-25 NUMBER OF SEQ ID NOS: 15 SOFTWARE: Patentin Ver. 2.1 SEQ ID NO 10	
1759 CTGCAAACAGGATCTGATTTGGGAACTTCCAAGTTTATGAATGA	da Ab		
1699 TATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAACATTACTAAAAATAGTGTT 1758 	da Yo	APPLICANT: NARAYANAN, SANJEEV K. APPLICANT: CHENGAPPA, M. M. TITLE OF INVENTION: RECOMBINANT FUSOBACTERIUM NECROPHORUM LEUKOTOXIN TITLE OF INVENTION: VACCINE AND PREPARATION THEREOF	
1639 GGGGTTGTGGCTGCAAATATTTCTAACTATAATGCTTCCTCCCGTATAGATGTAGATGGA 1698 	da As	Patent No. U920020054883A1 GENERAL INFORMATION: APPLICANT: NAGARAZY, T. G. APPLICANT: STEMARY, GEORGE C.	
1579 AGTGAAGCGATTAATTCCATTCGAGCTGCTGTAAAAGGTGGATTGGGGGGATAGTGGTAAT 1638	Ag Ag	<u>⊢</u> αο	RES
601 TCCGTCAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACGGATGATGAAATGTGAGA 660	ממ	10754 AAATGA	문 5
541 ATGAGAGATTCCAATAAAGTAGCTCTTTCAGTATTGGTGACGGAAGGAGGAGAAATAAAT	2 05	o 10594 TCTTCTGAAAAAGCATACAAAAAATTGACATATCAATCAA	2 8
1459 ATGAGAGATTCCAATAAAGTAGCTCTTTCAGTATTGGTGACGGAAGGAGAAAAATAAAT	. Q	9661 TCTTCTGAAAAAGCATACAAAAAATTGACATATCAATCAA	}
1399 AGAGCAGATATTACTTCAAAATCTGAAAATACTATTGATGCTTCTGTTTCTGTTGGAACG 1458 	Qy dd	9601 AAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCAT 9660 	당 성
1339 TATATTTCTGCAAAAAGTAATTCCAATGTAACTATTGAAGGAGAAGTAAAATCGAAGGGA 1398 	עס	y 9541 TTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAAT 9600 	B 8
1279 AAAATTACCAATTTATATTTGGAGAAAGCCAATGGAAAACTTCTCAGTATCGGAGCGGGA 1338 	da As	Y 9481 GCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAA 9540 	B 8
1219 GCANATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGAGCAGCTACTTCTCCATTA 1278 	Qy	9421 TATGCCGGATATGATAAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGAT 9480 	B 8
1159 ACAAGTAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGTCGAAGCAACAGAAGGAAAA 1218 	Qy Db	y 9361 aatagaactaataatgttgatttagcaggaaaaattaaaacagagggaaacatcaatgta 9420 	유 상
1099 TITAGCTITGTTACAGGITCTATITCTCCCTATCAATTTAAATGGATTTTTAGGTTTATTG 1158	Qy dg	y 9301 GGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATA 9360 	유 성
1039 ACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTAG	g Qy	Y 9241 AAAANTCAAAAATAATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTCAT 9300 	B 6
979 GATGTGGAAGCTTCCGTAAGAGTAAATAAAGGAAAAGTCATAGGAAAGAATGTTGACATT 1038 	D OY	.	B 8
919 GGGAGATTTATAAAGAAAGAAAGGAAAAAGAAACTTATAACACTCCTTTAAGTTTATCA 978 	dd Vo	Y 9121 GTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATT 9180	B 8
Best Local Similarity 100.0%; Pred. No. 0; Matches 2780; Conservative 0; Mismatches 0; Indels 0; Gaps			Db

```
1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2119
                                                                                                                                                            1921
                                                                                                                                                                                                                                                                                                                                                                                    1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1021
                                                                                                         1981
                                                                                                                                                                                      2839
                                                                                                                                                                                                                    1861
                                                                                                                                                                                                                                                                       1801
                                                                                                                                                                                                                                                                                                                              1741
                                                                                                                                                                                                                                                                                                                                                                                                             2599
                                                                                                                                                                                                                                                                                                                                                                                                                                          1621
2101
                                                                              2959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATCATAATAATTCTGCTTCTGTGGCAATAGGAGAGAGTGGAAGACTTTCTTCAGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGGAAAATTGATATCAACAGTGAAAATAAAATTGAATATAAAAATCCTTCAAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGGATGGAACTTCAAAAACAGGAACTGCTATAGAAATTGCAAACTATGTTCAGGGAGAA 2478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTCCAGAATATGATCCGAAAGATATTGAATCTATTGAAAAATTATTGAATGCATTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAAAGATTTAAATATAAAAGCTATCAATAAAGCAGAAACAGTGAATTTAGTTGGAAAT 2778
                                                                                                                                                                                                                                                                                                                                            TGGGTAGAACAGGAGAATTATAGCAAGGTATCCGTTGGAAAAGGAGCTAAACTTGCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                          GGACTGATTAAAGAAACTTTGAATTTTACAGGAGTAGGAAATTATGCAAATTTTCACACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGACTGATTAAAGAAACTTTGAATTTTACAGGAGTAGGAAATTATGCAAATTTTCACACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGAAAAATTAGAGGAAAAATTACCGAAAGGATTTAAAGCTTTTTCAGAAGGATTGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGAAAAATTAGAGGAAAAATTACCGAAAGGATTTAAAGCTTTTTCAGAAGGATTGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATGGAAACTATAAAAATAATGCTTCTGTGACAATTGCCGATCATGCTGAATTGGTATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATGGAAACTATAAAAATAATGCTTCTGTGACAATTGCCGATCATGCTGAATTGGTATCG
                                                                   GGTGGGAATGCAATGAATGGAATGGGAAGTTATAGTGGAGGTATCAGTAAGGCAAGAGTT
                                                                                                        ATTGGACTTGCGAGAAGCAGTACATCCGGAAGTGCAGTCGGAGGAAGATTAAATGTTCAA 2838
                                                                                                                                                                                                                                                                         AAAAAAGATTTAAATATAAAAGCTATCAATAAAGCAGAAACAGTGAATTTAGTTGGAAAT
                                                                                                                                                                                                                                                                                                                              TGGGTAGAACAGGAATTATAGCAAGGTATCCGTTGGAAAAGGAGCTAAACTTGCTGCA
                                                                                                                                                                                                                                                                                                                                                                                  TTTACCTCTTCCGGAGCTAATGGAGAAAGAGATGTTTCTTCTGTGGGAGGAGCTGTTTCG
                                                                                                                                                                                                                                                                                                                                                                                                 TTTACCTCTTCCGGAGCTAATGGAGAAAGAGATGTTTCTTCTGTGGGAGGAGCTGTTTCG
              TCCATTGATGACGAAGCATATTTGAAAGCTAATAAAAAAATTTGCTTTAAACAGTAAGAAT
                                                      GGTGGGAATGCAATCAATGGAATGGGAAGTTATAGTGGAGGTATCAGTAAGGCAAGAGTT
TCCATTGATGACGAAGCATATTTGAAAGCTAATAAAAAAATTGCTTTAAACAGTAAGAAT
                                                                                                                                                                                                                                                                                                                                                         2718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1080
                                                                                                                                                                                                                    1920
                                                                                                                                                                                                                                                                                                                               1800
                                                                                                                                                                                                                                                                                                                                                                                                                                           1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1200
                                                                                                         2040
                                                                                                                                    2958
                                                                                                                                                                                                                                                                          1860
                                                                                                                                                                                                                                                                                                                                                                                    1740
                                                                                                                                                                                                                                                                                                                                                                                                                2658
 2160
                           3078
                                                      2100
                                                                              3018
```

5 B 5 B

g

S

S 밁 S 8

밁

음 성

8 8 8 8 8 8

8 & 8

밁

중 음 중

밁

ち 음 ち

음 성

밁 Ş 밁 8 밁

```
밁
                                                                                                                                                      S
                                                                                                                                                                             S
                                                                                                                                                                                          문
                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                     5
밁
         Ś
                      g
                               Ś
                                           문
                                                       δ
                                                                      멼
                                                                             Ś
                                                                                           문
                                                                                                      성 유
                                                                                                                             Ş
                                                                                                                                                                     밁
                                                                                                         3439
                                                                                  3499
                                                                                                                      2461
                                                                                                                                 3379
                                                                                                                                              2401
                                                                                                                                                          3319
                                                                                                                                                                      2341
                                                                                                                                                                                  3259
                                                                                                                                                                                              2281
                                                                                                                                                                                                         3199
                                                                                                                                                                                                                      2221
                                                                                                                                                                                                                                 3139
                                                                                                                                                                                                                                                         3079
2761
           3679
                       2701
                                   3619
                                              2641
                                                          3559
                                                                      2581
                                                                                              2521
                                                                                                                                                                                                                                            GATACTTCTGTTTGGAATGCTGCCGGTTCAGCGGGAATCGGAACGAAAATGCGGCGGTC
                                                                                                                                              TCTTTAGAAGTAGATGCAAAAACGACCGGAACAATCAACAGTATTTCTGTTGCCGGAGGA
                                                                                                                                                                                              GACGAAGGACAAAGTAAATATGATAAGAATÁAAGATGATGAAGTAACAGTAACTGCGGAA
                                                                                                                                                                                                                     TCTGGAAGTGTTTCTTTCAATAATATTAAAAAGGAAACATCTGCTGTCGTAGATGGAGTA 3618
                                                                     AATCTTCCTTCGAACGTTTCTCATACTCCCGATAAAGGACCGTCTTTCAGTTTGGGAGCT
                                                                                             GGATTTTTTGGCAAAATCGGAAACAAAGTGGACTCTGTAAAAAATAAAATTACGGATAGT
GTTGGAGCATGGGGCGGATC
      GTTGGAGCATGGGGCGGATC 3698
                                                                                                                            GGATTTTTTGGCAAAATCGGAAACAAAGTGGACTCTGTAAAAAATAAAATTACGGATAGT
2780
                                                                                                                                                                                                                                 3198
                                                                                    3558
                                                                                                                                   3438
                                                                                                                                               2460
                                                                                                                                                                        2400
                                                                                                                                                                                   3318
                                                                                                                                                                                               2340
                                                                                                                                                                                                           3258
                                                                                                                                                                                                                       2280
                                                                                                                                                                                                                                               2220
                                                                                                                                                                                                                                                          3138
                                                                                                           3498
                                                                                                                        2520
                                                                                                                                                           3378
                                                                        2640
                                                                                                2580
```

```
RESULT 6

US-10-647-057-10

US-10-647-057-10

US-10-647-057-10

Sequence 10, Application US/10647057

Publication No. US20040047871A1

GENERAL INFORMATION:
APPLICANT: KANSAS STATE UNIVERSITY RESEARCH FOUNDATION
APPLICANT: WAGARAJA, T.
APPLICANT: WAGARAJA, T.
APPLICANT: CHENGAPPA, M.
APPLICANT: CHENGAPPA, M.
TITLE OF INVENTION: RECOMBINANT FUSOBACTERIUM NECROPHORUM LEUKOTOXIN VACCINE AND PREFITILE OF INVENTION: THEREOF
FILE REFERENCE: PCT-30962
CURRENT APPLICATION NUMBER: US/10/647,057
CURRENT APPLICATION OUNBER: US/10/647,057
CURRENT FILING DATE: 2003-08-22
NUMBER OF SEQ ID NO 10
SEQ ID NO 10
LENGTH: 2780
TYPE: DNA
ORGANISM: FUSObacterium necrophorum
US-10-647-057-10
Query Match 28.6%; Score 2780; I
Best Local Similarity 100.0%; Pred. No. 0;
Matches 2780; Conservative 0; Mismatches
                                                         DB 7;
       0;
                                                         Length 2780;
          Indels
          0
             Gaps
             0
```

PRE

3079 GATACTTCTGTTTTGGAATGCTGCCGGTTCAGCGGGGAATCGGAAAAATGCGGCGGTC 3138	999 GAAGGGAGTAATGTAAGGGCATTAAATGAAGCTCAAAATCTTCGAGCGACTACGTCAAGT 2
3019 TCCATTGATGACGAACCATATTGAAAGCTAATAAAAAATTGCTTTAAACAGTAAGAAT 3078	QY 1939 AATCATAATATTCTGCTTCTGGCAATAGGAGAGAGGGGAGAGACTTTCTTCAGGAGTG 1998 Db 1021 AATCATAATTCTGCTTCTGTGCCAATAGGAGAGAGTGGAAGACTTTCTTCAGGAGTG 1080
939 GU LGGARI GCARI GARA LGGARAGI IA LAGI GARGICA LAGI CARGOCANGNI I	OY 1879 GAGGAAATAAAGATAAGCTAACGAACTTATTTAGTGTCGGTGTGTCTGCAACCATAGCA 1938
y ATTANIGCAGATGCATTGAACKGACTTTTTCATGTGAGCGGATCTTTTAATGGTGGCTCA	Oy 1819 GGTCATCTAAAATCAATTTTAGATGCAATAAAACAGCGGTTTTGGAGGAGACAGTGTCAAT 1878 OY Db 901 GGTCATCTAAAATCAATTTTAGATGCAATAAAACAGCGGTTTGGAGGAGACAGTGTCAAT 960 Db
B39 AGATCGAAAATTCAGCTATCGTAGAAGCTAAAGAAAAGCTGAATTATCAGGAGAAAAT 	OY 1759 CTGCAAACAGGATCTGATTTTGGGAACTTCCAAGTTTATGAATCACGTTTATGAATCA 1818
779 ATTIGACTTGCGAGAAGCAGTACATCCGGAAGTGCAGTCCGAGGAAGATTAAATGTTCAA H	OY 1699 TATCTACATGCCAAGAAGCGACTAAATGTGGAGGCTCATAACATTACTAAAAATAGTGTT 1758
719 AAAAAAGATTAAAATATAAAAGCTATCAATAAAGCAGAAAGAGTGAATTTAGTTGGAAAT 	OY 1639 GGGGTTGTGCAAATATTTCTAACTATAATGCTTCCTCCCGTATAGATGTAGATGGA 1698
659 TGGGTAGAACAGGAGAATTATAGCAAGGTATCCGTTGGAAAAGGAGCTAAACTTGCTGCA [OY 1579 AGTGAAGCGATTAATTCCATTCGAGCTGCTGTAAAAGGTGGATTGGGGGATAGTGGTAAT 1638
99 TITACCTCTTCCGGAGCTAATGGAGAAAGAGATTTCTTCTGTGGGAGGAGCTGTTTCG	OY 1519 TCCGTCAAAGATTGCTAAAGGAGCAAAAGTAGAATCAGAAACGGATGATGTAAATGTGAGA 1578
39 GACTGATTAAGAAACTTTGAATTTTACAGGAGTAGGAAATTTATGCAAATTTTCACACT	OY 1459 ATGAGAGATTCCAATAAAGTAGCTCTTTCAGTATTGGTGACGGAAGGAGAAAATAAAT
ATGAAAAAATTAGAGGAAAAATTACCGAAAGGATTAAAGCTTTTCAGAAGGATTGAGT ATGAAAAAATTAGAGGAAATTACCGAAAGGATTAAAGCTTTTTCAGAAGGATTGAGT ATGAAAAAATTAGAGGAAAAATTACCGAAAGGATTTAAAGCTTTTTCAGAAGGATTGAGT	OY 1399 AGAGCAGATATTACTTCAAAATCTGAAAATACTATTGATGCTTCTGTTTGGAACG 1458
419 CCGGATGGAACITCAAAAACAGGAACIGCTATAGAAAITGCAAACTATGTTCAGGAAAAAACAGGAACTGCTTATAGAAAATTGCAAACTATGTTCAGGAAAAAAACAGGAACTGCTTATAGAAATTGCAAACTATGTTCAGGAGAAAAACAGGAACTATGCAAACAAA	OY 1339 TATATTTCTGCAAAAGTAATTCCAATGTAACTATTGAAGGAGAAAGTAAAATCGAAGGA 1398 Db 421 TATATTTCTGCAAAAGTAATTCCAATGTAACTATTGAAGGAGAAAGTAAATCGAAGGGA 480
359 GAAAAATTGGATGAAAACCGGAGCTTTTACTAAATGGTGAAAGAATGACAATTATTCTT 	OY 1279 AAAATTACCAATTTATATTTGGAGAAAAGCCAATGGAAAACTTCTCAGTATCGGAGCGGGA 1338
99 ACTICAGAATAIGAATCGAAAGATATTGAAATTATTGAAATGATTTCA	OY 1219 GCAAATATTCATTCTTACAGTGGAGTAAGAGCAACTATGGGAGCAGCTACTTCTCCATTA 1278
GCAAAGTCTGTTATTGATAAATTAGAACTTTTAAAGAGAGGCTTTTGGAAAAGAAACGAAA 	OY 1159 ACAAGTAAGTCCAGTGTCGTTATTGGAAAAGATGCCAAAGTCGAAGCAACAGAAGGAAAG 1218
GAAGGAAAAATTGATAFCAACAGTGAAAATAAATTGAATATAAAATCCTTCAAAAATG	OY 1099 TTTAGCTTTGTTACAGGTTCTATTTCTCCCTATCAATTTAAATGGATTTTTAGGTTTATTG 1158
119 TATIGAAACTATAAAAATAATGCTTCTGTGACAATTGCCGATCATGCTGAATTGGTATCG	OY 1039 ACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACTTAAGCTTGCAAAGCACTCT 1098
1009 GANGTGTGGCTGTACGAAAGGAAAAAAAAGAAACTTATTGGAAATGCAGCAGTTTTT	QY 979 GATGTGGAAGCTTCCGTAAGAGTAAATAAAGGAAAAGTCATAGGAAAGAATGTTGACATT 1038
	OY 919 GGGAGATTTATAAAGAAAGAAAGAAAAGAAAACTTATAACACTCCTTTAAGTTTATCA 978

INTOAINTITICANACANAGCITCCATTGANGATANT 2280 2280	7405 GGAATTAAAGCCATTG	3 8 5	; LENGTH: 2322 ; TYPE: DNA ; TYPE: DNA ; ORGANISM: Fusobacterium necrophorum US-09-841-786-13	·		APPLICANT: NARAYANAN, SANJI APPLICANT: CHENGAPPA, M. M APPLICANT: CHENGAPPA, M. M TITLE OF INVENTION: RECOMBII	ОшС	RESULT 7 US-09-841-786-13 Sequence 13. Application US/0	Qy 3679 GTTGGAGCATGGGGCGGATC	Qy 3619 AAGATAAATTTGAAGGG	Qy 3559 TCTGGAAGTGTTTCTTT	Qy 3499 AATCTTCCTTCGAACGT	QY 3439 ATGGATTCATTAACAGI	Qy 3379 GGATTTTTTGGCAAAAA 	Oy 3319 ATTAATAAGGTTGGAAC	Qy 3259 TCTTTAGAAGTAGATGG	Qy 3199 GACGAAGGACAAAGTAA 	Db 2221 GGGGTTGCTGTTGCGGT
AT 2280 AT 2280 Db 61 AT 2280 DD 61 AT 2280 DD 61 AT 2340 DD 121 AAA 2340 DD 121 AAA 2340 DD 121 AAA 3318 QY 7585 AGA 3318 QY 7585 AGA 3378 QY 7585 AGA 3378 QY 7585 AGA 3378 QY 7585 ACA 3378 QY 7645 ACA 7464 DD 61 DD 61 DD 6241 DD 7765 DD 7765 DD 7765 DD 77765 DD 77765 DD 77825 DD 77836 DD 77	GAAGACTTCTGATATTATTGGAAAAAATGTAGATA	Score 2322; DB 3; Length 2322 Pred. No. 0; 0; Mismatches 0; Indels	rophorum	S	US/09/841,786	EV K. ANT FUSOBACTERIUM NECROPHORUM LEUKOT AND PREPARATION THEREOF	7	9841786		agcaaataaaaaggtagaggtgacttcttctgattc 	Caataatattaaaaaggaaacatctgctgtcgtaga 	TTCTCATACTCCCGATAAAGGACCGTCTTTCAGTTT 	aaaaattacaaattacatttctgaaggagtaaaaa 	CGGAAACAAAGTGGACTCTGTAAAAAATAAAATTAC 	TAAACCGAGTGAAGAAAAACCGAAATCAGAAGAAAA 	AAAAACGACCGGAACAATCAACAGTATTTCTGTTGC 	atatgataagaataaagatgaagtaacagtaac 	AAATGATTATGATATTTCAAACAAAGCTTCCATTGA
	7464	Gaps 0;	. Qy	Qy				Qy da	Oy Db	3678 2760	3618 2700	3558	3498 2580	3438 2520	3378 2460	3318	3258 2340	2280
				01	45 41	85	25	65	2 %	45 41	85	25 21	65 61	2 05	4 5	85	25 21	61 GAGGACAAGAATAATATC

Ş

8 8 8 8

중 유

```
8665
                                                                                                                                                                                                                                         1981
                                                                                                                                                                                                                                                                                                                                                             9325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8545
  2161
                                                                                                                                                                                                                                                                                                                        1921
                                                                                                                                                                                                                                                                                                                                                                                                     1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1441
                           AAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCTAAT
                                                                                               TCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTT
                                                                                                                                                                                                                                         GCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTAT
                                                                                                                                                                                                                                                                    GCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTAT
                                                                                                                                                                                                                                                                                                                      TTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGA 8844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAAACGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAGGAACTGGAAGACCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGA
                                                                                                                                                          AATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCT
                                                                                                                                                                                       AATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAATCATCCATTGAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAG
  AAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAACGTCGGTAGGATCTAAT
                                                                                                                  9564
                                                                                                                                                                                                                                                                                                                                                                                                                                          9324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8604
2220
                                     9624
                                                                          2160
                                                                                                                                                          2100
                                                                                                                                                                                               9504
                                                                                                                                                                                                                                         2040
                                                                                                                                                                                                                                                                                9444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1320
```

Ş

밁

성 유

중 유

송 유

중 음 중

밁

중 유

중 음

δ β

& B 8 B

```
Sequence 13. Application US/10647057

publication No. US20040047871A1

GENERAL INFORMATION:

APPLICANT: KAMSAS STATE UNIVERSITY RESEARCH FOUNDATION

APPLICANT: NAGARACA, T.

APPLICANT: NAGARACA, T.

APPLICANT: NAGARACA, T.

APPLICANT: CHEMBARPA, M.

ITILE OF INVENTION: RECOMBINANT FUSOBACTERIUM NECROPHORUM LEUKOTOXIN VACCINE AND PREP

TITLE OF INVENTION: THEREOF

FILE REFERENCE: PCT-30962

CURRENT APPLICATION NUMBER: US/10/647,057

CURRENT FILING DATE: 2003-08-22

NUMBER OF SEQ ID NOS: 15

SOFTWARE: Patentin version 3.0

SEQ ID NO 13

LENGTH: 2322

TYPE: DNA

ORGANISM: FUSObacterium necrophorum

US-10-647-057-13
                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
Ş
                     뫄
                                                        Ş
                                                                                                    밁
                                                                                                                             Ş
                                                                                                                                                                       밁
                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 8
US-10-647-057-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      뭉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 23.9%; Score 2322; D
Best Local Similarity 100.0%; Pred. No. 0;
Matches 2322; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                    7645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9625
 7945
                                                                                                                                                                                                                                                                                                                                                                                                                         7585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7405 GGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACA 7464
                                                                                                                                      7825
                                  481
                                                                                                       421
                                                                                                                                                                         361
                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAAAAAA 9684
 GAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTCT
                                                                                                                           GTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAAATTCAGAGGTTGAAATT
                                                                                                                                                                                                 GTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCG
                                                                                                                                                                                                                                                                  TCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGAT 7764
                                                                                                                                                                                                                                                                                                                                         ACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAAT 7704
                                                                                                                                                                                                                                                                                                                                                                                                           TTTGTGAAAGCAGCTGAAAAAGTAAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTA 7644
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAGGAACAGTGGCAGTTACAAATATTAAAAAGAAATTCCGGAGTTACTGTTGAAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCCGGAGTTACTGTTGAAAATTCT
                                                                     GAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAGA 794
                                                                                                                                                                           GTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGCG
                                                                                                                                                                                                                                                                                                                  ACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAAT
                                                                                                                                                                                                                                                                                                                                                                                         TTTGTGAAAGCAGCTGAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGACATATCAATCAAAGAGAGAGAAAAAGGGAAAAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAATGA
                                                                                                                                                                                                                                                TCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 2322;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
 8004
                                    540
                                                                                                       480
                                                                                                                                        7884
                                                                                                                                                                                                             7824
                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                360
```

```
8065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8005 GTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTAT
                                                                                                                                                                                                                                                                                                                      1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8245
                                                                                                                 1501
                                                                                                                                                                                   1441
                                                                                                                                                                                                                  8845
                                                                                                                                                                                                                                                   1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1201
                                                  1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGGAGTGAATACTTCTACAGCACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGGA 8364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGGTTTGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAATTTCTAAAGTAGAAGTTTGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAGGTAAAACTATGGTAGAAGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTCATGCAGATAATGTGAATATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTAT
                                                                                                                                                                                                                                                                            GCAAGAGATAATACGATTGTAAGAGTCAACGGAGGACGGAACCAAAGGAGGTCTTGTCGGA
                                                                                                                                                                                                                                                                                                                                                                                                       AAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCT
AATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACT
                                                                                                                                                                                                        AAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGAT
                                                                                                                                                                                                                                                   GCAAGAGATAATACGATTGTAAGAGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGA
                                                                                                                                                                                                                                                                                                                                            AGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGA
                                                                   GATCTACAAGGAAAAAGTGGTGGCTATTGGTGGAATTGGTATTGGAAATGTTGATGTAAAT
                                                                                                                                      AAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGAT
                                                                                                                                                                                                                                                                                                                      AGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAAATTGGAGATAAATTAGAAACGATT
                                                                                                                                                                                                                                                                                                                                                                                    AAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAG
                                                    GATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTTGGAAATGTTGATGTAAAT
                                                                                                                  8184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 960
                                                                                                                      1560
                                                                                                                                                                                                                                                       1440
                                                                                                                                                                                                                                                                                        8844
                                                                                                                                                                                                                                                                                                                         1380
                                                                                                                                                                                                                                                                                                                                                        8784
                                                                                                                                                                                                                                                                                                                                                                                         1320
                                                                                                                                                                                                                                                                                                                                                                                                                           8724
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8604
                      9084
                                                                                     9024
                                                                                                                                                                                        1500
```

중 유

중 유

정 음 성 음

8 8 8 8 8 8

8 8 8 8 8 8 8 8 8

ঠ

```
Ş
                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                         뮍
                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                              밁
                                        밁
                                                     S
                                                                      멍
                                                                                       Ş
                                                                                                            문
                                                                                                                        S
                                                                                                                                          망
                                                                                                                                                            Ś
                                                                                                                                                                                밁
                                                                                                                                                                                             ঠ
                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                      1861
                                                                                                                                                                                                                                                                       9265
                                                                                                                                                                                                                                                                                         1801
                                                                                                                                                                                                                                                                                                         9205
                                                                                                                                                                                                                                                                                                                           1741
                                                                                                                                                                                                                                                                                                                                           9145
                                                                                                             2101
                                                                                                                              9505
                                                                                                                                              2041
                                                                                                                                                                                   1981
                                                                                                                                                                                                  9385
                                                                                                                                                                                                                    1921
                                                                                                                                                                                                                                     9325
                                                                                                                                                                                                                                                                                                                                                             1621 AATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACT
        2281
                       9685
                                                          9625
                                                                           2161
                                                                                           9565
                                                                                                                                                                                  GCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAAATTAT
                                                                                                                                                                                                                                                      TTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAAATATTACT
                                                                                                                                                                                                                                                                                                                           GCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAAT
                                                                                                                                                                                                                                                                                                                                      GCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAAT
TTGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAATGA
                                         AAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAAGGTCGGTAGGATCTAAT
                                                                                                             TCGGCAACTGCCACTATTGAAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTT
                                                                                                                      TCGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTT
                                                                                                                                                        AATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCT
                                                                                                                                                                                           GCAGGAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAATTAT
                                                                                                                                                                                                                              TTGACATATCAATCAAAGAGAGAGAGAAAAAAGGGAAAAAAATGA
                                                     CAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAAGCATACAAAAAA
                                                                           AATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAAGTCATGCTGCAGCTGCT
                                                                                                                                                                                                                     9726
          2322
                                                                                                                                                                                                                                        9384
                                                                                                                                                                                                                                                                                                                                                               1740
                                                                                                                                                                                                                                                                                                                                                                                                  1680
                                                                                                                                                                                                                                                         1920
                                                                                                                                                                                                                                                                         9324
                                                                                                                                                                                                                                                                                                                                               9204
                                                                                                                                                                                                                                                                                                                                                                                 9144
                                                                                                                                                                                                      9444
                                                                                                                                                                                                                       1980
                                                                                                                                                                                                                                                                                           1860
                                                                                                                                                                                                                                                                                                            9264
                                            2280
                                                              9684
                                                                              2220
                                                                                               9624
                                                                                                                2160
                                                                                                                                 9564
                                                                                                                                                   2100
                                                                                                                                                                  9504
                                                                                                                                                                                    2040
                                                                                                                                                                                                                                                                                                                               1800
```

ş

음 성

음 상 음 양 음

```
US-09-841-786-11

Sequence 11, Application US/09841786

Patent No. US20020054883A1

GENERAL INFORMATION:
APPLICANT: NACARAJA, T. G.
APPLICANT: NARAYANAN, SANJEV K.
APPLICANT: STEWART, GEORGE C.
APPLICANT: NARAYANAN, SANJEV K.
APPLICANT: CHENGAPPA, M. M.
TITLE OF INVENTION: VACCINE AND PREPARATION NECROPHORUM LEUKOTOXIN
TITLE OF INVENTION VACCINE AND PREPARATION THEREOP
FILE REFERENCE: 30296

CURRENT APPLICATION NUMBER: US/09/841,786

CURRENT FILING DATE: 2001-04-24

PRIOR APPLICATION NUMBER: 09/558,257

PRIOR FILING DATE: 2000-04-25

NUMBER OF SEQ ID NOS: 15

SOFTWARE: Patentin Ver. 2.1

SEQ ID NO 11

LENGTH: 2141

TYPE: DNA

ORGANISM: Fusobacterium necrophorum
US-09-841-786-11

Query Match
Best Local Similarity 100.0%; Pred. No. 0;
```

0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	B & B &	8 8 8 8	B & B &	8 8 8 8	B & B &	B & B &	QY Ma
4453 TATITTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATACGAAGGAACAACTA 4512	4333 AGGGTTGATRAATCTTCCARGGAAGGAGCTAATGAAATCAATGTCATTGCCAAAGATGTC 4392	0-0 4-4	4093 GYAAAGICAAATIGYAACTGITAGGGCTACTGTGACTGTTGCCAAATTAAACAACAACAAATA 4152 [GTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCCAAAAAATGGAT	3853 TIGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTAAAGAAAG	3733 AATAGCAACATCAGTGCTTGGTTTAGCTGGAGCGGCTGCTGTAAATAATATTCAAAGTAAA 3792	atches 2141; Conservative 0; Mismatches 0; Indels 0; Gaps 0; 3553 GGAGCTTCTGGAAGTGTTTCTTTCAATAATATTTAAAAAGGAAACATCTGCTGTGGTAGAT 3612
8 8 8 8 8	5	S B S B ;	5 8 5 8	8 8 8 8 8 8	0	}	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
981 AATAAGGAAAAGCAAATTACTTCTGCACATATAAAAAATAGTAC 2141 981 AATAAGGAAAATACTTCTGCACATATAAAAAAATAGTAC 2141	861 473 921		33	OI ACAAACGTTTCTGCTGGAGGCCGCTGCAAAGATTAAGCAAGATAAATACAATTGCCGGAAAT OI ACAAACGTTTCTGCTGGAGGCCGCTGCAAGTATTAAGCAGGCTGGAATCGGAAGGAA	53 41 93	COTTENEGGE TRANSCINGE THE LEVEL OF THE LEVEL OF THE COLOR	GCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTCATGCGAAACATGTA

Commission Com

. \$ \$ \$ \$ \$ \$ \$	Query Ma Best Loc Matches Qy 5	; SOI ; SEQ ; EI ; LI ; OI ; OI ; OI	PR.	RESULT US-09: Sequ ; Sequ ; GENI ; API ; API	문 &	g dy	g dy	ρ Q	g Q	유 성	ф
5684 AAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAAGCAAATCTCATTCAT	Y Match 19.4%; Score 1887; DB 3; Length 1887; Local Similarity 100.0%; Pred. No. 0; hes 1887; Conservative 0; Mismatches 0; Indels 0; Gaps 0; hes 1887; Conservative 0; Mismatches 0; Indels 0; Gaps 0; 5624 CTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAA 5683	NUMBER OF SEQ ID NOS: 15 SOFTWARE: PatentIn Ver. 2.1 SEQ ID NO 12 LENGTH: 1887 TYPE: DNA ORGANISM: Fusobacterium necrophorum -09-841-786-12	APPLICANT: CHENGAPPA, M. M. TITLE OF INVENTION: RECOMBINANT FUSOBACTERIUM NECROPHORUM LEUKOTOXIN TITLE OF INVENTION: VACCINB AND PREPARATION THEREOF FILE REFERENCE: 30296 CURRENT APPLICATION NUMBER: US/09/841,786 CURRENT FILING DATE: 2001-04-24 PRIOR APPLICATION NUMBER: 09/558,257 PRIOR PEILICATION NUMBER: 094-25	2 2 2 2	5653 AAAATTACACAAAATACTTCTGCACATATAAAAATAGTAC 5693 	5593 GCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAAT 5652	5533 AATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAAT 5592 	5473 GTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAATAATGGA 5532 	5413 GGAGGAGAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACA 5472 	5353 AAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTT 5412 	1741 CAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGA 1800
5 6 6 6 6 6 6	S & & & & & & & & & & & & & & & & & & &	D Qy	S B S B S	5	S & &	Qу	Qу	Qy Db	ОУ	D Qy	дb
6824 CAGGTACTGGAATCATAATAATGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTG	21 44	01 84 61		661 CTATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAG 6344 TAGTAGGTCTGTTGGTTGGTGGAAATGTAGGAGAGATTAGGAGGTTCTCTCTGATACCAATA		6164 CAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAG	6104 ACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAGGATTTGTTACCAATAGTT 	6044 TTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATATTA 	5984 CTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAAACAGATGATTATA 	5924 TGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAAATGAAATTACAGGAT	241 AGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAG 300

RESULT 12 US-10-647-057-12 Sequence 12, Application US/10647057 Sequence 12, Application US/10647057 Publication No. US20040047871A1 SEQUENCE 12, Application No. US20040047871A1 SEQUENCE 12, Application No. US20040047871A1 SEQUENCE 12, Application No. US20040047871A1 SEGNERAL INFORMATION: AND THE SECOME APPLICANT: CHEMAPPA, GEORGE APPLICANT: CHEMAPPA, GEORGE APPLICANT: CHEMAPPA, CANTOLERY APPLICANT: CHEMAPPA, GEORGE TITLE OF INVENTION: RECOMBINANT FUSOBACTERIUM NECROPHORUM LEUKOTOXIN VACCINE AND PREFITITLE OF INVENTION: THEREDOP FILE REFERENCE: PCT-10962 FILE REFERENCE: PCT-30962 CURRENT FILLING DATE: 2003-08-22 NUMBER OF SEQ ID NOS: 15 SEQ ID NO 12 SEQ ID NO 15 SEQ ID NO 16 SEQ ID NO 17 SEQ ID NO 17 SEQ ID NO 18 SEC LOCAL SIMILARITY 100.04; Pred. No. 0; Indels 0; Gaps 0; MATCHES 1887; CORDETVALIVE 0; MISMATCHES 0; Indels 0; Gaps 0; MATCHES 1887; CORDETVALIVE 0; MISMATCHES 0; Indels 0; Gaps 0; MATCHES 1887; CORDETVALIVE 0; MISMATCHES 0; Indels 0; Gaps 0; MATCHES 1887; CORDETVALIVE 0; MISMATCHES 0; Indels 0; Gaps 0; MATCHES 1887; CORDETVALIVE 0; MISMATCHES 0; Indels 0; Gaps 0; MATCHES 1887; CORDETVALIVE 0; MISMATCHES 0; Indels 0; Gaps 0; MATCHES 1887; CORDETVALIVE 0; MISMATCHES 0; Indels 0; Gaps 0; MATCHES 1887; CORDETAGRAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGA	OY 7004 GAGGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAAACACTATAAATAGTT 1381 GAGGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAAACACTATAAATAGTT 140 7064 CTGTGATAGGTCGAGTTCACAATAACTCTGATTTGACTTCGGTACGGAAAAAATAGTT 141 7064 CTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGGAAAAAATAGTT 140 707 7164 CTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGGAAAAAATAGTT 140 7124 TAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGCGAGGAGGAATAGT 7125 TAACGGCAAAAAAAAATATTAAGCAAACAGCAGCAAATGCGAGAATCGGAGGAG 7126 CAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGAACAACACGCAAATGCGAGGAGAAAAA 7243
Db 661 CTAINTITAATCCAAAACCTTAINTICTOTTAAATCCAGAATTCAATCCAATA 6403 Qy 6344 TAGTAGGTTCTGTTGGTGGGAAATGTAGGAGGTAGGAGGTTCTTCTGATACCAATA 6403 Db 721 TAGTAGGTTCTGTTTGGTTGGGAAATGTAGGAGGTAGGAGGTTCTTCTGATACCAATA 6403 Qy 6404 TTATAAAAGAAATACCAAGACCAAGACTACAAACTACCAATA 6403 Db 781 TTATAAAAAGAAATACCAAGACCAAGACTTCGAAAACTACCAATATTTCGATTACAAGGTTTCG 6463 Db 781 TTATAAAAAGAAATTACCAAGACAAGACTTCTAAGCAAGTTTCCTCTTTTTGGAGTCGGAG 6523 Db 781 TGGCAGCAGCCTGAAATTACAGCAAGATTCTAAGCAAGGAATTTCCTCTTTTTGGAGTCGGAG 6523 Db 841 GAGAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTTGGAGTCGGAG 6523 Db 901 TCGCAGCAGCCCGGGGTAGGAGCCGGAAGTTCCTAAGCAAGGAATTTCCTCTTTTTGGAGTCGGAG 6583 Db 901 TCGCAGCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAG 6643 Qy 6584 GAAAGACCGAAGTAGATGTAGATGTGAAAAGAACTATTTGCTAAAAAAAA	OY 121 AAACAATTGGAATTTGGAGCTGGAGGTTGGAGGTGGAGTGACAGGTTCTGTAG 5803 Db 121 AAACAATTGGAATTTGGAGCTGGAGTTGGAGCTGGAGTGACAGGTTCTGTAG 5803 OY 5804 CAGTGAATAGATTTTAAATAATAATACGATAGCAGAATTAAATCATTGCAAAAATCACTGCGA 5863 Db 181 CAGTGAATAGATTTTAAATAATAATACGATAGCAGAATTAAATCATTGCAAAAATCACTGCGA 240 OY 5864 AGGGAAATGTCGGAGTTATTACAGAGTCTGATGCAGAATTATATCACTGCGA 240 OY 5924 TGTCTGGAGTGGCCCGTGCAGCAATAGCAGGAATTAAATCACTGCGAACAG 5923 Db 241 AGGGAAATGTCCGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAG 5923 OY 5924 TGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAATGAA

1021 GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT	11.6%; Score 1130; DB 3; Length 1130; Qy	US-09-841-786-9 Query Match
961 ACTCCTTTANGTTTATCAGATGTGGAAGCTTCCGTAAGAGTAAATAAAGGAAAAGTCATA 1020 	30 Qy Fusobacterium necrophorum Db	LENGTH: 11 TYPE: DNA ORGANISM:
901 AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAA	NG DATE: 2000-04-25 SEQ ID NOS: 15 Patentin Ver: 2.1 Db	PRIOR FILING I NUMBER OF SEQ SOFTWARE: Pate SEO ID NO 9
841 AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT	MBER: US/09 2001-04-24 3ER: 09/558	FILE REFERENCE: 30296 CURRENT APPLICATION NUMBER: U. CURRENT FILING DATE: 2001-04 PRIOR APPLICATION NUMBER: 09/
781 CAAAAAGCTATGGGAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA 840 	SANJE M. M. SCOMBIN	APPLICANT: NARAYANAN APPLICANT: CHENGAPPA TITLE OF INVENTION: RE TITLE OF INVENTION: V
721 TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCCT	20054883A1 QY ION: BAJA, T. G. Db	; Patent No. US20020054883A1 ; GENERAL INFORMATION: APPLICANT: NAGARAJA, T. G ; APPLICANT: STEWART, GEOR
661 ACAGATTITAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT 	Qy Db	RESULT 13 US-09-841-786-9 ; Sequence 9, App
601 ATCGGTTTATATGCGGGGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT	CTTCTACTGGTGGTTTGGGAACTGCAG 7510 Qy	Qy 7484 CTTC Db 1861 CTTC
541 ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC	AGACTTCTGATATTATTGGAAAAATGTAGATATTACAACAGAGGACAAGAATAATATCA 7483 Qy	Oy 7424 AGAC
481 GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA 540 	ATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGA 7423 Qy	Qy 7364 ATACTT
421 ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG 480	ATAAAAAAGTAAATGATGCTACGAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAG 7363 Qy	Oy 7304 ATJ
361 ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT	ATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAGAACAAG 7303 Qy	Oy 7244 AT
301 AACTTTGTCAATGGAAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA 360 	CAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTGGAACAGCTGTAGAAGATAGAAAAA 7243 Qy	Oy 7184 CAC Db 1561 CAC
241 AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT	TAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGGAGGAG 7183 Qy	Oy 7124 TAJ Db 1501 TAJ
181 ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTTAACAGAA 	CTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAGAAAAGTAAATG 7123	Oy 7064 CTV
121 ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTATGACATTACT 	GAGGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTT 7063 Qy	Qy 7004 GAO Db 1381 GAO
61 GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC	CTTCTACTGATGTAAAAGGTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTG 7003 Qy	Qy 6944 CT
1 ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA 60	TTTCTGTCAATAATATTGCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACT 6943	Qy 6884 TTP Db 1261 TTP
Best Local Similarity 100.0%; Pred. No. 8.9e-187; Matches 1130; Conservative 0; Mismatches 0; Indels		Db 1201 CAC

밁 Ś 밁

```
APPLICANT: STEWART, GEORGE
APPLICANT: NARAYANAN, SANJEEV
APPLICANT: CHENGAPPA, M.
APPLICANT: CHENGAPPA, M.
TITLE OF INVENTION: RECOMBINANT FUSOBACTERIUM NECROPHORUM LEUKOTOXIN VACCINE AND PREF
TITLE OF INVENTION: THEREOF
FILE REPERENCE: PCT-30962
CURRENT APPLICATION NUMBER: US/10/647,057
CURRENT FILING DATE: 2003-08-22
NUMBER OF SEQ ID NOS: 15
SOFTWARE: Patentin version 3.0
SEQ ID NO 9
SEQ ID NO 9
SEQ ID NO 9
SEQ ID NO 9
TYPE: DNA
ORGANISM: Fusobacterium necrophorum
US-10-647-057-9
                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
US-10-647-057-9
                                                                                                                                  문
                                                                                                                                                                 ð
                                                                                                                                                                                                        밁
                            S
                                                                  밁
                                                                                             S
 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 9, Application US/10647057 Publication No. US20040047871A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 1130; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: KANSAS STATE UNIVERSITY RESEARCH FOUNDATION APPLICANT: NAGARAJA, T. APPLICANT: STEWART, GEORGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1021
                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
 541
                                  541
                                                                  481
                                                                                                    481
                                                                                                                                    421
                                                                                                                                                                      421
                                                                                                                                                                                                        361
                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCCTAT 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT
                                                                                                                                                         ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG
                                                                                                                                                                                                                                                                                                                                                                AATAATATAGCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                 ACAAACAAGATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCGCGACTGAGAATTTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTATGACATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTTTAATGATTTTGGGATTGTTGATTAACACTATGACGGTGAGGGCTAATGATACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGAGCGGCATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCTAT 1130
                                                                                         GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA
                                                                                                                                                                                                        ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT
                                                                                                                                                                                                                                          ATTGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTT
                                                                                                                                                                                                                                                                                                         AACTTTGTCAATGGAAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA 360
                                                                                                                                                                                                                                                                                                                                              AATAATATAGCAAATCTATATTTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCGCGACTGAGAATTTTGGAACAAAAATAGAAAAAAAGGATAATGTTTATGACATTACT
 ATTCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC
                     ATTCCATTGAATCCGAATGGAAGGATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGC
                                                                     GAAGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAA
                                                                                                                                      ATCAATGCTGGTTCTTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTG
                                                                                                                                                                                                                                                                            <u>AACTTTGTCAATGGAAAATTGAAGTAGATGGGATTATCAACGGAATTCGAGAAAATAAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11.6%; Score 1130; DB 7; Length 1130; 100.0%; Pred. No. 8.9e-187; tive 0; Mismatches 0; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                     540
                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
   600
                                   600
                                                                                                    540
                                                                                                                                      480
                                                                                                                                                                        480
                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/742,096
CURRENT FILING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: US 08/973,642
PRIOR PILING DATE: 1998-02-06
PRIOR APPLICATION NUMBER: PCT/FR96/00894
PRIOR APPLICATION NUMBER: PCT/FR96/00894
PRIOR APPLICATION NUMBER: PCT/FR96/00894
PRIOR APPLICATION NUMBER: PCT/FR96/00894
PRIOR PILING DATE: 1998-06-12
PRIOR PILING DATE: 1995-06-13
NUMBER OF SEQ ID NOS: 29
SOFTWARE: PATENTIN VERSION 3.1
SEQ ID NO 2
LENGTH: 5361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 15
US-09-742-096-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                 á
                                                                                                                       US-09-742-096-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application US/09742096
Patent No. US20020155441A1
GENERAL INFORMATION:
APPLICANT: DRUILHE, PIERRE
APPLICANT: DRUILHE, PIERRE
APPLICANT: DAUBERSIES, PIERRE
APPLICANT: DAUBERSIES, PIERRE
TITLE OF INVENTION: MALARIAL PRE-ERYTHROCYTIC
FILE REFERENCE: 200773USODIV
                                                Query Match
Best Local Similarity
Matches 1747; Conserv
                                                                                                                                      FEATURE:
NAME/KEY: CDS
LOCATION: (1)..(5361)
OTHER INFORMATION:
                                                                                                                                                                                                        ORGANISM: P. falciparum
                                                                                                                                                                                                                          TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1021
5126 GTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCA 5185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTCTCCTAT 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGCTTGCAAAGCACTCTTTTAGCTTTGTTACAGGTTCTATTTTCTCCTAT 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGGAAAAAGAAACTTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACT 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTGCGAAAGCTACAAATGGGAGATTTATAAAGAAAGAAGGGGGAAAAAAGAAACTTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAAATT
                                                   1.2%;
ilarity 41.7%;
Conservative
                                                     0
                                                  Score 116.2; DB 3;
Pred. No. 9e-10;
0; Mismatches 2373;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STAGE POLYPEPTIDE MOLECULES
                                                       Indels
                                                                                     Length
                                                       67;
                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       720
                                                       14;
```

S

S

AAAAAGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATG	6020 CTAAAGAAGAAGAATGATTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATA 6079	TAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCCCAACTGTTGAAGAAATTGTAAGAACTCCCAACTGTTGAAGAAATTGTAGCTCCAACCTGTTGAAGAAATTGTAGCTCCAACCGTGTGAAGAAATTGTAGAAGAATTGTAGAAGAATTGTAAAAGATTGAAGAA	5780 GAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAACGATAGCAGAAT 5839	5663 AAAATACTTCTGCACATATAAAAAATAGTACTACAAAATGTACGAAATGCTTTGGTAAAAA 5722 1313 TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGGCTCCAAGTGTTGAAAAAGTGTAGAAGAAA 1372 5723 GCAAATCTCATTCATCTATTAAAACAATTGGAAGTTGGAAGTTGGAGGCTGGAG 5779 1373 ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAAGAAAGTGTTGAAAATGTTGAAGAAA 1432	5543 AGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGC 5602 1193 GTGTAGCTGAAAATGTTGAAGAAAGTGTTAGCTGAAAATGTTGAAAAATGTTGAAAATGTTGAAAA 1252 5603 TTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTAATAAAATTACAC 5662	5423 AAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTC 5482	5303 TAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGAAAAAATATCA 5362	773 GTGTTGAAGAAAGTATAGCTTCAAGTGTTGATAGAATACAATTGCCGGAAATGCAAATGGAG 5242 5186 ATGTAGATGCAAAAAGATCAAAAAACAATAAATACAATTGCCGGAAATGCAAATGGAG 5242
B 66 68	2	B & B &	B & B &	5 6 8 6 5 6 8	B & B &	5	B	90 QQ QQ
7211 ATAATTTTGGAACAGCTGTAGAAGAAAAAAATTCTGAAGGAAAAGGAAAAGGTTT 7270	7094 ATTTGACTTCCGTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAATATTTA 7150	6974 ATAAAATTTCGAATTCCTTGACAGCCGGTGGAAGAGCCGCAGGTCTTGCAGCAGTTACCG 7033	6854 GAATTCTTGCAGCCGGAGTATCTTGGAGTGGTTTCTGTCAATAATGTAGGAATAAGGTAG 6913 2504 TCGAAACTGAGGAAATAAAGGACAGTATATTAAATGTAGAAGAAGAAAATG 2563 6914 AAACAGATATCGATCATAGGACAGTATATTAAATGAGATAAAAGTAAAAAGTAAAATG 2573 6914 AAACAGATATCGATCATAGAACTTTTACACTCTTCTACTGATAGATGTAAAAGCTCTTA 6973 1	TIGAMENAACACGAGAGAGAGAGAGAAAATTCTAAAATTATGACTCGAAACAGT	TTTTGGTAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATG	6497 AAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGTAGGAGCCGAGTGGCAG 6556 2144 TTGAAGAAAGTTAGCTGAAAATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCG 2203 6557 GAACCGTTTCCGTAAATCAATTTGCAGGAAAGAGATGTAGATGTGGAAGAAGCAAAGA 6616	6380 TAGGAGCTTCTTCTGATACCAATATTATAAAAGAAATACCAAGACAAGA	

8 В ફ 밁

```
3098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7451
8388
                                                                                                                                                                                                                                                                                                                                                                                                               3816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGTTGAAATAAATGACATTACTAGCAAACTTATTGAAGAAACTCAAGAGTTAAATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAATGAATTCAGAGGTTGAAATTGAGAAGAAGTATTTTCAATGAAGAAAATAGAGTAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAAAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCTATTAGGAAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGTGTTCAAGAAACTGTAACTGAACATGTAGAACAAAATGTATATGTGGATGTTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATAT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAGTAATCCAATCAGAAGAAAAGGTTGATTTGAATGAAAATGTGGTTAGTTCGATTTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAGATATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGGAATACAAGAAATTTATTAACAGGTATG-----TTTCGAAGTATAGAAACCAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAGTTTAGAAAACAATGAAATGGATAAAGCATTTTTTAGTGAAATATTTGATAATGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAG
                                                                                                                                                                                                                                                                                                                                                    AGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGAAGCAGATTTAATAAAAGATATGGAAAAATTAAAAGAATTAGAAAAAGC--ATTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTAAAGATAAAGAAAAAGATGTTTCACTAGTTGTTGAAGAAGTTCAAGACAATGATATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGATGCAGTAGAAGAATCCATAGAAATATCTTCAGATTCTAAAGAAGAAACTGAATCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTAAGGATGAACCGGTTCAAAAAGAGGTAGAAAAAGAAACTGTTAGTATTATTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTTŤTTTAAŤTTGĠAAGATGTATTTAAAAGTGAAGTGATGTAATTACTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ---TACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAG
ACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTA
                                                                                                                                                                            CAAGATCGAAAAAGTATCTGATTTAAAAGATCTTGAAGAAGATATATTAAAAAG-----
                                                                                                                                                                                                                                TCGATTGAATGCAATTTCTAAAGTAGAAGGTTTCGATGAAGATAAAGTAACTGCTAAATC
                                                                                                                                                                                                                                                                                             GGAACATGATATAACGACGACGTTGGATGAAGTTGTAGAATTAAAAGATGTCGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAGATTCTAAAGAAATAATAGATGCAAAAGATGATACATTAGAAAAAGTTATTGAAGA
                                                          -- AAGTAAAAGAATCAAAGAACTTGAAAGTGAAATTTTAGAAGATTATAAAGAATTAAA
                                                                                                              TTCTGTAGTATCAGGAAATGGAGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7510
                                                          4046
                                                                                                                                                                                                                                                                                                3935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3757
```

8 & 8

중 유

र् 밁

밁

밁 S

δ

밁

밁

중 유 δ 뭥 Ş

ð B

음 성

문

성 음 성 음

Ş 밁 ঠ 밁 र् 밁 ঠ

```
Ś
                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                           음 성
                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                               문
                                                                                          5
                                                                                                                    밁
                                                                                                                                                          S
                                                                                                                                                                                              В
                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4047
                                                                                                                                                                                                4704
                                                                                                                                                                                                                                                               4644
                                                                                                                                                                                                                                                                                                8988
                                                                                                                                                                                                                                                                                                                                4584
                                                                                                                                                                                                                                                                                                                                                                 8928
                                                                                                                                                                                                                                                                                                                                                                                                 4524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8688
                                                                 4824
                                                                                                                                                                                                                              9048
4884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTATTGAAACAGATATTTTAGAAGAGAAAAAAGAAATAGAAAAAGATCATTTTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACAAAAAAATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGC
AGTATCTAAAGCTTTAGAATCAAAAATGATGTTACTAATGTTTTAA
                    TCAATTAATAACCAAAAATTCAAAAAAATAATAATTACTTTTAGCATCAA 9274
                                                                                    GAATGTACACATTTCCAATGAGATGGATATTAAAAATTTTGGCAAAGCAGTATGCATCTTC
                                                                                                                                                                                                                                                                                       CTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAAATGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                              TACAATTTCAGGGGAAACAAAATCATCCATTGAAGATAAAGCCCAGAATTGTTGGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCATTAGAAGTTGAAGAAGAAAAAAATTAGAAGAAGTACACGAATTAAAAGAAGAGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTCGAAGAAGAAGCTGAAGAAATAAAAGATCTTGAAGCAGATATATTAAAAAGAAGTATC
                                                                                                                                AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATT
                                                                                                                                                                                                                                                                 AGAAGAAGATATAGAAGAAGATAAAGTTGAAGATATAGATGAAGATATAGATGAAGATAT
                                                                                                                                                                                                                                                                                                                                AAGTGTAAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                 AAAGAAAAAAATAACAAAAAAAGAAAGTAAGGTTTGATATTAAGGATAAGGAACCAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTAAAAGATGTTTTATCTAGTGCATTAGGCATGGATGAAGAACAAATGAAAACAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGATATGGATAAGGAAAGTTTAGAAGATGTAACAACAAAACTTGGAGAAAGAGTTGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTAGATGA-TTTAAAAGGAAGTATATTAGACATGTTAAAGGGAGATATGGA--ATTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAACATATAATAAGTGGTGATGCGCATATAAAAGGTTTGGAAGAAGATGATTTAGAAGA
                                                               AAAACACGTAGACGAAGTAATGAAATATGTTCAAAAAATTGATAAAGAAGTTGATAAAGA
                                                                                                                                                               TACAAGAGCAAAAGTAAATATTCTTGGAAAAAGGAGACGCTGCAGCTGCAGCTGCAATATC
                                                                                                                                                                                                AGGTGAAGACAAAGATGAAGTTATAGATTTAATAGTCCAAAAAAGAGAAAACGCATTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAA
     4930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8567
                                                                                                                                                                                                                                                                                                                                                                                                     4583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4166
                                                                      4883
                                                                                                                                                                                                                                                                                                                                     4643
                                                                                                                                                                                                                                                                                                                                                                                                                                     8927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4343
```

Ş

S

Ş 밁 Ś 밁

Sequence 1, Application US/09742096
Fatcent No. US20020155441A1
GENERAL INFORMATION:
APPLICANT: DRUILHE, PIERRE
APPLICANT: DAUBERSIES, PIERRE
ITILE OF INVENTION: MALARIAL PRE-ERYTHROCYTIC ST.
FILE REFERENCE: 200773USODIV
CURRENT APPLICATION NUMBER: US/09/742,096
CURRENT FILING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: US 08/973,642
PRIOR FILING DATE: 1998-02-06 RESULT 16 US-09-742-096-1 STAGE POLYPEPTIDE

MOLECULES

```
; PRIOR APPLICATION NUMBER: PCT/FR96/00894
; PRIOR FILLING DATE: 1996-06-12
; PRIOR APPLICATION NUMBER: FR 95/07007
; PRIOR FILLING DATE: 1995-06-13
; NUMBER OF SEQ ID NOS: 29
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
; LENGTH: 6152
; TYPE: DNA
; ORGANISM: P. falciparum
US-09-742-096-1
                                     밁
                                                                Ş
                                                                                                             밁
                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                            음 성
                                                                                                                                                                                                                                                                                                                                                                                                              음 성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                        S
                                                                                                                                                                            망
                                                                                                                                                                                                                                                                음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 1.2%; Score 116.2; DB 3; Best Local Similarity 41.7%; Pred. No. 9.6e-10; Matches 1747; Conservative 0; Mismatches 2373;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1257
 CCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTG
                                                                        TAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAA
                                                                                                                                                                                                                            GAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAAT 5839
                                                                                                                                                                                                                                                                                                     GC---AAATCTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA 1496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          atgttgatcaaactgatattgacaaagatttagaggaagaaataatggaaataaggaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA 1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAA 5422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGAAAAAATATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAATATTGGAAAACAATCAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     АТСТАСАТССАЛЛАСАТСАЛАЛАЛАСАТАЛАТАСАА---ТТССССОЛЛАТССАЛАТССАС
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGTTGAAGAAAGTATAGCTTCAAGTGTTGATGAAAGTATAGATTCAAGTATTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCA
                                   TCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAA
                                                                                                               ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAA
                                                                                                                                                  TAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGG
                                                                                                                                                                                       GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                ATGTTGAAGAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                            TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                             AAAATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6152;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                       1736
                                                                                                                                                                                                                                                                1676
                                                                                                                                                                                                                                                                                                                                            1616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1076
                                     1856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1256
 6019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      र्
                 á
                                                      문
                                                                                    S
                                                                                                                             밁
                                                                                                                                                        Ş
                                                                                                                                                                                             문
                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                      6914
                                                                                                                                                                                                                                            6854
                                                                                                                                                                                                                                                                                                                                                                                                   6737
                                                                                                                                                                                                                                                                                                                                                                                                                                        2568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1857
7034 GAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTG
                                                                                                                                                                                                                                                                                                                                                             2628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAGTGTAGAAAATGTTGAAGAAA
                                                      GTAACATATTAGAGGAGATACAAGAAAATACTATTACTAATGATACTATAGAGGAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTGGCAGTTACCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGCTGAĀĀATGTTGĀĀĠĀĀAGTGTĀGCTGĀĀĀAĀTGTTGĀĀGAĀĀGTGTĀGCTGAĀĀATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGATTACACGAATTCAATCGGAGTAGGTAGGTTCTGTTGGTGGTGGAAATGTAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGTÄGCTGÄÄÄATGTTGÄÄGÄÄÄGTGTAGCTGÄÄAATGTTGÄÄÄÄÄGTGTÄGCTGÄÄÄÄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTAAAGAAGAAACAGATGATTATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATA 6079
                                                                                           ATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTTGCAGCAGTTACCG
                                                                                                                                 TAGTCACCACAATACTAGAAAACGTAGAAGAAACTACAGCTGAAAGTGTAACTACTTTTA
                                                                                                                                                                                                           TCGAAACTGAGGAAATAAAGGACAGTATATTAAATGAGATAGAAGAAGTAAAAGAAAATG
                                                                                                                                                                                                                                            GAATTCTTGCAGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATTGCAAATAAGGTAG
                                                                                                                                                                                                                                                                                                                      тасатстватассасавалатсясяталалствостводатсосттся ссесоваестс
                                                                                                                                                                                                                                                                                                                                                             TTGAAGAATTGTAGCTCCAAGTGTTGAAGAAAGTGTAGCTCCAAGTGTTGAAGAAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                   ATGAATCAAACACGAGAGCAAGAGTGAAAAATTCTAAAATT---ATGACTCGAAACAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTCCAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAAGCAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTAGGAGCCGGAGTGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAACTACAATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGATTCTAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGAĀGĀĀAGTGTĀGCTGĀĀĀĀTGTTGAĀGAĀAGTGTĀGCTGĀĀAĀTGTTGAĀGAĀATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAACAGAAGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCTGTAAAATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAATGTTGAAGAAAGTGTAGCTGAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAAAGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAAATCTTTATTGGCAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATA 6139
                                                                                                                                                                  AAACAGATATCGATCATAGTACTTTACACTCTTCTACTGATGTAAATGTAAAAGCTCTTA
                                                                                                                                                                                                                                                                                   TTGCTGAAAACGTTGCAACAATTTATCAGACAATCTTTTAAGTAATTTATTAGGTGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGAAGAAAGTGTAGAAGAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTTGGTAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTGTTGTA----GAAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -GAAAATGTTGAAGAAATCGTAGCTCCAACTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1916
                                                                                                                                                                                                                                                                                     2747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1976
                                                                                                                                                                                                           2807
                                                                                                                                                                                                                                                                                                                                                             2687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2030
```

8 8 8 8 8 8

8088 AAGAAGTATTTTCATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAAC 8147	8028 AATTATTTCCGAAGCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGG 8087		7/02 IAGHIGLAGHAGHAGHAGHAGHAGHAGHAGHAGHAGHAGAAAGAA	ADATGAAGTAAATA I IGIAGA IGIA I AGAGGAAGAGTATTTCAATGAAGAAAATAGAAGTAACTA AAATGAAGTCAGAGGTTGAAATTGAGAAGAGAGTATTTCAATGAAGAAAATAGAAGTAACTA AAATGAAGTAACTAAATAGAAGAAGAGTATTTCAATGAAGAAAATAGAAGTAACTA AAATGAAGTAACTAAATTCAAGAAGAGAGAGAGAAGAAGAAGAAGAAGAAGAAGAAGA		AGCTATTAGGAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAG	GAGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTA	TACAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAG	CTGTTGAAAATTCTTTTTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATAT CTGTTGAAAATTCTTTTTGTGAAAAGCAGCTGAAAAGTAAATGTTAGATCGGATAT	GICTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAAATTCCGGAGTTA	TAGATATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAG		AAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAG	7271 TAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAA 7330	7211 ATAATTTTGGAACAGCTGTAGAAGATAGAAAAAATTCTGAAGGAAAAGGAACAGAAGTTT 7270	7151 AGCAAACAGCAGCAAATGCAGGAATCGGAAGGAAGCAATCGGAGCCAATGTCTTGGTAA 7210	2928 TAGAAGAACTCCACGAAAATGTATTAAGTGCCGCTTTAGAAAATACCCAAAGTGAAGAGG 2987 7094 ATTTGACTTCCGTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTA 7150
Ф	S B 7	Q B Q	B 8	סם אם	Db Qy	Ωу	p Q	Q dd	D Q	Qy Db	Db Qy	Db Qy	d Q	Db Qy	D 49	ָר אַ בּיּרָ בּירָ	ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο
 	GATTAAAGCGAAAAAAAATTAGAAAAAAATTGGAAAAAGTTGAAGAAGGTGTTAGTGGTCTTAA	9048 AGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTGGAAAACAACAATATCAAGCATT 9107	8988 CTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATAATGTTAAGAAAAATGTAGA 9047	8928 AAGTGTAAATGTAGATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGG 8987 	8868 TACAATTTCAGGGGAAACAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGG 8927 	8808 AGTCAACGGAGACGGAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAA 8867	8748 AGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAG 8807		8628 AAAAGCTTTTGGCTAAAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGT 8687	8568 GAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGC 8627	8508 GAATATAGAATCTTTAGCGGTAGCCGGTGTGCATGCACAAGGAACAAACA	8448 CACAAAAAATATATTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGC 8507 	8388 ACAAAGTAATACTGAATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTA 8447	8328 TTCTGTAGTACAGGAAATTGGAAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGC 9397	CAAGATCGAAAAAGTATCTGATTTAAAAGATCTTGAAGAAGATATATTAAAAGG		8148 AGCAGTTTCTAAAGCAGTAACAGGTTCTGTATTTGGGAGGAGTTGGAGTCACCAAGGCAGA 8207

음 성

Ş

유

유 성

음 성

음 성

음 성

음 중

음 성

유

음 성

문

ち 음 ち

B 8 B 8 B

```
GENERAL LECOMEN, Joe
APPLICANT: Cohen, Joe
APPLICANT: Cohen, Joe
APPLICANT: Cohen, Joe
APPLICANT: Druilhe, Pierre
TITLE OF INVENTION: Immunogenic Compositions Comprising
TITLE OF INVENTION: Liver Stage Malarial Antigens
FILE REFERENCE: B45250
CURRENT APPLICATION NUMBER: US/10/415,253
CURRENT FILING DATE: 2003-04-25
PRIOR APPLICATION NUMBER: PCT/EP01/12349
PRIOR FILING DATE: 2001-10-23
PRIOR FILING DATE: 2000-10-25
NUMBER OF SEQ ID NOS: 10
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 1
LENGTH: 5528
TYPE: DNA
ORGANISM: KI Parasite Strain
US-10-415-253-1
Length: Score 107.6; DB 7; Length
                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                              ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 17
US-10-415-253-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                   S
                                                                                                                                      Ś
                                                                                                                                                                             밁
                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 1741; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application US/10415253
Publication No. US20040067236A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5126
                                                                                                                                                                                                                                                                                                    5483
                                                                                                                                                                                                                                                                                                                                                                               5423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1121
                                                                                                                                                                                                                                                                                                                                        1241
                      TGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAAGTGTAGAAGAAAA
                                                           ACAAAATACTTCTGCACATATAAAAAATAGTACTCAAAATGTACGAAAATGCTTTGGTAAA 5720
                                                                                                                                        GCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTAC
                                                                                                                                                                             GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTTAGCTGAAAA 1420
                                                                                                                                                                                                                    AGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAAT---GCGACAGT
                                                                                                                                                                                                                                                                                                                                                                             AAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                       atgtgactgcaaaagattatactatgaccaatactatagcagtcgagcttggaggagcaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGAAAAAATATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGTTGAAGAAAGTGTAGAAAAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAAACAATCAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGTAGATGCAAAAGATCAAAAAACAATAAATACAA---TTGCCGGAAATGCAAATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGTTGAAGAAAGTATAGCTTCAAGTGTTGATGAAAGTATAGATTCAAGTATTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTCTGATGAAACGGAAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTATCTAAAGCTTTAGAATCAAAAATGATGTTACTAATGTTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAATTAATAACCAAAAATTCAAAAAAATAATAATTACTTTAGCATCAA 9274
                                                                                                  TGTTGAAGAATCGTAGCTCCAACTGTTGAAGAATCGTAGCTCCAACTGTTGAAGAAAT
                                                                                                                                                                                                                                                           ATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                               ATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAATAATGGAAATAAGGAAA 5542
                                                                                                                                                                                                                                                                                                                                    TTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAA 1300
                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 107.6; DB 7;
Pred. No. 2.9e-08;
0; Mismatches 2379;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5528;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1000
                      1540
                                                                                                  1480
                                                                                                                                                                                                                                                                                                                                                                             5482
                                                                                                                                                                                                                                                                                                                                                                                                                    1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                         5422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
S
                                      밁
                                                                     S
                                                                                                                  밁
                                                                                                                                                     Ś
                                                                                                                                                                                               밁
                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                        2552
                                                                                                                                                                                                                                      6618
                                                                                                                                                                                                                                                                                                                                                       2312
                                                                                                                                                                                                                                                                                                                                                                                             6498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5721
                                                                                                                                                                                               2432
                                                                                                                                                                                                                                                                             2372
                                                                                                                                                                                                                                                                                                                    6558
                                                                                                                                                                                                                                                                                                                                                                                                                                    2252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGCAAATCTCATTCATTAAAAACAATTGGAATTTGGAGCTGGAGTTGGAGCTGGAGCTGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACAGAAGCTCTTGTAGAAAATTCTATATATATATGCAAAACATTATTCTGTAAAATCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ANANGGATTTGTTACCAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATGC 6200
AGATGTAATAGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTGG
                                                                                                                                                         CGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTGGCAGTTACCAAAGA 6737
                                                                                                                                                                                                                                                                                                                                                         TGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACTACAATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGATTCTAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGATTACACGAATTCAATCGGAGTAGTAGGTTCTGTTGGTGTTTGGTGGAAATGTAGGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGCTGGTTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAGA 6260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTTGAAGAAAGTGTAGCT-----GAAAATGTTGAAGAAATCGTAGCTCCAACTGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAAAGAAGAAACAGATGATTATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTTĠTAGĀĀĀGTGTGGĊTCCĀĀGTGTTGĀĀĠĀĀĀGTĞTĀGĀĀĠĀĀĀĀTGTTGĀĀGĀĀAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTTGAAGAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATT 584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAG
                                        TGAAGAAATTGTAGCTCCAAGTGTTGAAGAAAGTGTAGCTCCAAGTGTTGAAGAAAGTGT
                                                                               TGAATCAAACACGAGAGCAAGAGTGAAAAATTCTAAAATT---ATGACTCGAAACAAGTT
                                                                                                                      AGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTCCAACTGT
                                                                                                                                                                                                  TGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAAGTGT
                                                                                                                                                                                                                                    TTTGGTAAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATGC
                                                                                                                                                                                                                                                                             AGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAAGTGT
                                                                                                                                                                                                                                                                                                                AACCGTTTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGAAGAAGCAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                             AGGAATTTCCTCTTTTGGAGTCGGAGTCGCAGCCAGCCGGGTAGGAGCCGGAGTGGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCTCCAAGTGTTGAAGAAAGTGTAGAAGAAAATGTTGAAGAAAGTGTAGCTGAAAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTGTTGTA---GAAAGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAA
    6854
                                                                               6794
                                                                                                                                                                                                                                        6677
                                                                                                                                                                                                                                                                                                                                                         2371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2011
                                                                                                                                                                                                                                                                             2431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6080
```

7683 AGCTGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAA 7742	7512 TCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAAGAAATTTAAAAGAAATTCCGGAGTTAC 7571			AGAAGAACTCCACGAAGAATGTATTAAGTGCCGCTTTAGAAAAAAAA	AGTCACCACATACTAGAAAACGTAGAAGCTACAGCTGAAAGTTACCGG TAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTTGCAGCAGTTACCGG	TGCTGAAAACGTTGCAACAAATTTATCAGACAATCTTTAAGTAATTTATTAGGTAGTAATATTAGGTAGAAAATTTATCAGACAAATCTTTTAAGTAATTTATTAGGTAGTAATAATATAGGTAGAAAAAA
4572 8809 4632 8869 4692 8929	Db 4395 GAACATATAATAAGTGGTGATGCGCATATAAAAGTTTGGAAGAAGATTTTAGAAGAA 4454 Qy 8629 AAAGCTTTGGCTAAAAATTATGGAAAATTATGGAAAATGATAAAAGGAACTGGAGGAGCCTTAGTC 8688	Qy 8449 ACAAAAAAATTTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAAGCA 8508	Db 4104 AAGATCGAAAAAGTATCTGATTTAAAAAGATCTTGAAGAAGATATTTAAAAGA 4155 Qy 8329 TCTGTAGTATCAGGAAATGAGGAGGAATTGCCGGAAGGAGTATATTAAAAGA 4155 Qy 8329 TCTGTAGTATCAGGAAATGAGGAGGAGTGAATTGCCGGAAGGAGTAATACTCTACAGCA 8388	Qy 8149 GCAGTTTCTAAAGCAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAA 8208	Qy 8029 ATTATTTCGAAGCAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGA 8088	Db 3686 AGATIGCAGTAGAAGAATCCATAGAAATATCTTCAGATTCTAAAGAAGAAACTGAATCTAT 3745 Qy 7923 CCCTTCTAAAGGAATTGGAAGAAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGAC 7982

8 8 8 8 8 8

8888

```
밁
                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                             ş
                                                                                 8
                                                                                                            밁
                                                                                                                               ঠ
                                                                                                                                                               밁
                                                                                                                                                                                    S
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 18
US-10-668-749A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        吊
                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Agilent Technologies
TITLE OF INVENTION: Methods and Systems for Nanopore Data Analysis
FILE REFERENCE: 50112-1580
CURRENT APPLICATION NUMBER: US/10/668,749A
CURRENT FILING DATE: 2003-09-23
NUMBER OF SEQ ID NOS: 8
SOFTWARE: PatentIn version 3.2
SEQ ID NO 1
LENGTH: 1300
TYPE: DNA
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: synthetic construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1, Application US/10668749A Publication No. US20040110205A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                          Matches 537;
                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                              -10-668-749A-1
                                                                                                                                                                                                                                                                                                                                                                                        Local
                                 8786
                                                                                                                                      9998
                                                                                                                                                                                                                                            8546
                                                                                                                                                                                                                                                                                                                                               8426 AAGATTATGAAAATAATGATTACACAAAAAAATATATTTCAGAAGTCAATGCTCTTGCTT
                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                 181
                                                                                                                                                                                                                   121
         361
                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAATTAATAACCAAAAATTCAAAAAATAATATTACTTTAGCATCAA
                                CAAGAGATAATACGATTGTAAGAGTCAACGGAGACGAAACGAAGGAGGTCTTGTCGGAA 884
                                                        GTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAATTGGAGATAAATTAGAAACGATTG
                                                                                                                                   AAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAGCAGCCGTTGAAAATTATACAAAGA 872:
                                                                                                                                                              GAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTAAAAATGAAAATTATGGAAATGTAA
                                                                                                                                                                                                                                          AAGGAACAAACAAAGCATTTACGAGATCAAACAAGTTAACTTCTACAACTGTAAATGGAG
                                                                                                                                                                                                                                                                     GTATCTAAAGCTTTAGAATCAAAAAATGATGTTACTAATGTTTTAA 5097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATGTACACATTTCCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTGAAGACAAAGATGAAGTTATAGATTTAATAGTCCAAAAAGAGAAACGCATTGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCAAAATCGGAAGACATGCTATTGTAGAAAACTACTGGAAAAACAAGAATATCAAGCATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGAAGATATAGAAGAAGATAAAGTTGAAGATATAGATGAAGATATAGATGAAGATATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATGGTGGAATTGGTATTGGAAATGTTGATGTAAATATGTGATTAAGAAAATGTAGAA
         AAACACGTAGACGAAGTAATGAAATATGTTCAAAAAATTGATAAAGAAGTTGATAAAGAA
                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                      0.8%;
                                                                                                                                                                                                                                                                                                                                                                          ..
                                                                                                                                                                                                                                                                                                                                                                                      Score 80.4; DB 7;
Pred. No. 0.00086;
                                                                                                                                                                                                                                                                                                                                                                            Mismatches 761;
                                                                                                                                                                                                                                                                                                                                                                                                 Length 1300;
                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9274
                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                         8665
                                                                                                                                                                                                                                           8605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9048
                                                                                   8785
                                                                                                            300
                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4871
RESULT 19
US-09-815-242-4761
US-09-815-242-4761
Sequence 4761, Application US/09815242; Patent No. US20020061569A1; GENERAL INFORMATION:
APPLICANT: Haselbeck, Robert; APPLICANT: Ohlsen, Kari L.; APPLICANT: Zyskind, Judith W.; APPLICANT: Wall, Daniel
APPLICANT: Wall, Daniel
APPLICANT: Trawick, John D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                           9566
                                                                                                                                                                                                                                                                                                                                    1081
                                                                                                                                                                                                                                                                                                                                                             9506
                                                                                                                                                                                                                                                                                                                                                                                      1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8966
                                                                                                                                                                                                                              1201
                                                                                                                                                                                                                                                         9626
                                                                                                                                                                                                                                                                                 1141
                                                                                                                                                                                                                                                                                                                                                                                                                9446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8846 AGAATGGTATTTCTGTGAAAAATACAATTTCAGGGGAAACAAAATCATCCATTGAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAAA 9723
                                                                                                                                                                                                                                                                                                                                    GAGCCAAAGCGACAGTTAGTGTAAAGAATCAAATAAATAGAACTAATAATGTTGATTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGAAAATTAAAACAGAGGGAAACATCAATGTATATGCCGGATATGATAAAAATTATA 9445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAAATT 920:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAAGGAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACAAAAAAT 9685
                                                                                                                                                                                                                                                                                  AAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATAAAAAAACGTCGGTAGGATCTAATC
                                                                                                                                                                                                                                                                                                                                                             CGGCAACTGCCACTATTGAAAAAAATGAAGTAAAATTTAATAATGCGATCCGAGAATTTA
                                                                                                                                                                                                                                                                                                                                                                                                              ATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAAATA 9025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1200
                                                                                                                                                                                                                                                                                                                                    1140
                                                                                                                                                                                                                                                                                                                                                             9565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9385
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT FILING DATE: 2001-03-21
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR PILING DATE: 2000-05-23
PRIOR PILING DATE: 2000-05-26
PRIOR PILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR PILING DATE: 2000-10-23
PRIOR PILING DATE: 2000-11-27
PRIOR PILING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR PILING DATE: 2000-12-12
PRIOR PILING DATE: 2000-12-16
PRIOR PILING DATE: 2000-12-16
PRIOR PILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                         밁
                유 성
                                                                                            밁
                                                                                                                             S
                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: FastSEQ for Windows Version
SEQ ID NO 4761
LENGTH: 7434
TYPE: DNA
ORGANISM: Staphylococcus aureus
3-09-815-242-4761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 998; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Yamamoto, Robert T.
APPLICANT: Xu, H. Howard
TITLE OF INVENTION: Identification
TITLE OF INVENTION: Prokaryotes
FILE REFERENCE: ELITRA.011A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match 0.8%;
Local Similarity 41.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3839
                                                                                                                                                                           4079
                                                                                                                                                                                                                                                           4019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3782 TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA 3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAAGCTAAAGCAAATGCAGAAGCAGCGATTAATGCGGTAACACCAAAAGTTGTGAAGA 3898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTAATAAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG
                                                                                                                                                                                                    ACAACAAAGTAAATGCTTCTATTAGTGGTGGTGGGAGATATACTAACGTTAATCGAGCGGACG
                                                                                                                                                                                                                                                                                                                                                                   ATTTACAAGCTGGAAAGTCAAATGGAACTGTAGGGGCTACTGTGACTGTTGCCAAATTAA 4141
                                                                                                                                                                                                                                                                                                                                                                                                                     TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAAATCTGAAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATACTGAAAATGGTAAAGCAAATCAAGCCATTTCAGCAGCAACTACTAACGCACAAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATTCAAGCTACGCCAGATGCAACAGATGAAGAAAAAACAAGCAGCTGATGCTGAAGCAA 3778
                GTGCTACAACTGAAGAGAAAAATGCAGCAAAAGATTTAGTTTTAAAAAGCTAAAGAAAAAG
                                                        ACGTGGAAGCTAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCATTG
                                                                                                                                                                                                                                                           TTACAGACGCGAAAAATAATTACAGCTGCAACTGATGATAATGGTGTAGATCAGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAAATGGATGTTGATGTCACTGCTTATCAAGCGGACACCCCAAGTGACAGGAGCTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG
                                                                                              CTAAAAATGATGTTGATCAAGCTGTGACAACTCAAAATCAAGCAATTGATAATACAACTG
                                                                                                                                   GTTCTGGAGCGGGATTAGGAAATTATCAAGGGGCTGTTTCTGTCAATAAGATTGACAATG
                                                                                                                                                                             AAGACGCTGGAAAGAATTCAATTCAAAGCACGCAACCAGCAACAGCGGTTAAATCAAATG
                                                                                                                                                                                                                                                                                                                                          ATGATCAGAACGCTACAACAGAAGAAAAAGCAGCAGCTATTCAACAATTAGCAACAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches 1378;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 79.2; DB 3; Length 7434; Pred. No. 0.0029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Essential Genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42;
                                                        4381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3838
                  4258
                                                                                                                                                                                                                                                             4078
                                                                                                                                                                                                                                                                                                    4201
                                                                                                                                                                                                                                                                                                                                          4018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                     밁
                                                                         Ś
                                                                                                                   밁
                                                                                                                                                  δ
                                                                                                                                                                                                밁
                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4382
                                                                                                                                                                                                                                                                                                                                                                 5021
                                                                                                                                                                                                                                                                                                                                                                                                                                            4961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4922
5462 TGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTAATGCGGCTTCTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGAACAACTAGAAAAAGCAAAGAAAAAAAAGAAGGAGCGGTCATTGTAAATGCTGCTTTAT 456:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGTTGCTGATATTCAAGGTATTACTGCAGATACAACAATTAAAGATGTTG-----CGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGATAAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATACGA 4501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAAAGATGTCAAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTACTAAATGGAA
                                                                                                                                                                                                                                      ATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATG
                                                                                                                                                                                                                                                                                ATGCATATAATGCTAAAGTAAACGAAGCGGATAACTCTAACGCATCGACTTCAAGTGAAA
                                                                                                                                                                                                                                                                                                                                                                                          ATGTCGATCAATCATCAACAAATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAATCG 5101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGTACAAAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAACCAGCAGGTAAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTTAAATAATAATGCAGCAACTACTACAGGTGATGTAACTACTGCTAAAGATACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAATAATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTTCTACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----ACTAATGAAGAAAAGGTAACGATATTGGACCAGTTAGAGCAGCATATGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŤŤĠĊŦŔĄĊŦĠĄĄŔŦĠĊĄĄĄĄŤĄĄĄĄŦĄĄCŦĠĄĄĄŦĄĊŤŦĄĄŦĄĀŤĄĄTĠĠĠĊŤ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCAA 4801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCAAGCAATTGACCCAATTCAAGCATCAACAGATGTTAAAACGAATGCAAGAGC-GGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCAAAATATTGAAAATGCACAGTCAATCGATGATGTAAACACTGCAAAAGATAATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTCATG 4681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGACTACTGAAGAAAAAGAACAAGCAAATCAACAAGTAGACGCACAATTAACACAAGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAAA 4621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGATGAATTAGCAACAAAGCAAACGAACAAAAAGCGCTTATTGCACAAACTGCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGTATCAAGATATCTTAAATGCACAAACAACTAATGATGTTACGCAAATTAAAGATCAAG
                                         ATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACAACAGATTTATATGCTTATGCAG
                                                                             CAGTCGGAGTTGGAGGAGCCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCT
                                                                                                                                                          ATCAAGATAGAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATAG
                                                                                                                                                                                                  TTGCTGAAGCGAAACAAAACTTGCTGAATTAAAACAAACTGCGGATCAAAATGTTAATC
                                                                                                                                                                                                                                                                                                                     TTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAA
                                                                                                                                                                                                                                                                                                                                                               AAATTAATGCAGTTAAAACATTTAGTGAGTACAAAAAAGATGCTTTAGCTAAAATTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACAAGAAATTAATGATGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAACAA
                                                                                                                       <u>AAGCTACTTCTAAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTAACG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4372
      5521
                                                                                                                                                                 5401
                                                                                                                                                                                                      5200
                                                                                                                                                                                                                                                                                                                                                                                                                                                   5020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4432
```

δ

```
TITLE OF INVENTION: A METHOD FOR IDENTIFICATION, ISOLAT:
TITLE OF INVENTION: ANTIGENS TO A SPECIFIC PATHOGEN
FILE REFERENCE: SON.035US
CURRENT APPLICATION NUMBER: US/10/470,048B
CURRENT FILING DATE: 2003-07-25
NUMBER OF SEQ ID NOS: 603
NUMBER OF SEQ ID NOS: 603
SOFTWARE: Patentin version 3.1
SEQ ID NO 201
LENGTH: 7434
TYPE: DNA
ORGANISM: Staphylococcus aureus
                                                                                                                                                                                                                                                                                                                                 RESULT 20
US-10-470-048B-201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    중 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                      US-10-470-048B-201
                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                Sequence 201, Application US/10470048B Publication No. US20050037444A1 GENERAL INFORMATION:
 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                   APPLICANT: MEINKE ET AL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5321
                                                                                                                                                                                                                                                                                                                                                                                                                                            6161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5522
                                                                                                                                                                                                                                                                                                                                                                                                         ATGCAGATGCAGATGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTCAGCTACTCATACTT 6178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGAAGTTGAAAAAGCGAAAGCTCAAGGACTTGAAGCATTTGATAACATTCAAATCGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAATGATTAAACAAATTACAGATCAAGCTAAACAAGGTATTACTGATGCAACAACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGAACAGGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGTAGATGCTACTGTTAAACCTAAAGCGAACCAAGCTATTGAAGTTAAAGCAGAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAATTAAGCAAGTTGACCAAAATG---TTCAAACTGCATTAGAAAGCATTAATAATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAAATACGAGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCAGAAGAAAATAATATTTCAGCTGACACTAATGCAACAAGATGAAAAGCAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAAAATGCTTTGGAAGCAATCAGAGAAGTGGTTAACAAGCAAATAGAAATAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTAACGAAGACTTATCACAAAAAAGAAAATAAGTAATAAAAAAAGGATTTGTTACCAATA 6160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTĂCTGTCĂAAAATAGTGCGCTTGĂACĂACTTAAĂGCACAACGTATTĂATCCTGAAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGTAAATGTCAACGCTGATGCTACAACTGAAGAAAAAAGAAGCGTTTACGAATGCTTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAACAGAAAAACAAAAAGCTATCGAAGAATTAGAAACTGCACTAGACCAGATTGAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAAAGAATCTATTGATCAAAGTGACCAGTTAACTGCTGAAGAAAAAACTGAAGCATTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGACATTTTATCAAAAGCAACTGAAGATATTTCTGATCAAACTACAAATGCAGAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGATAATGGTGACGTTGATGATGCATTAACACAAGGTAAAGCAGCAATTGATGCTATTC
0.8%;
41.3%;
                                                                                                                                                                                                                                                                                                                                                                                                         6055
 Score
Pred.
 79.2; DB 8
                8
--
                                                                                                                                                                                                                                               ISOLATION
                Length 7434;
                                                                                                                                                                                                                                                 AND PRODUCTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5380
                                                                                                                                                                                                                                                 ç
   밁
                           S
                                                                   밁
                                                                                                   Ś
                                                                                                                                        밁
                                                                                                                                                                   Ś
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                          4442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3902
                                                                   4612
                                                                                                       4742
                                                                                                                                        4553
                                                                                                                                                                          4682
                                                                                                                                                                                                             4493
                                                                                                                                                                                                                                               4622
                                                                                                                                                                                                                                                                                 4433
                                                                                                                                                                                                                                                                                                                  4562
                                                                                                                                                                                                                                                                                                                                                      4373
                                                                                                                                                                                                                                                                                                                                                                                     4502
                                                                                                                                                                                                                                                                                                                                                                                                                          4319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3842
                                  4802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTAATAAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG
                                                                                                                                                                     CGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGATAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATACGA 4501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAAAGATGTCAAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTACTAAATGGAA 4441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGCTACAACTGAAGAGAAAATGCAGCAAAAGATTTAGTTTTAAAAGCTAAAGAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AÁGACGCTGGAAAGAATTCAÁTTCAÁAGCÁCGCAACAGCAÁCAGCGGTTAAATCAÁATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTACAGACGCGAAAAATAATATTACAGCTGCAACTGATGATAATGGTGTAGATCAGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACAACAAAGTAAATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCC 4021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGATTCAAGCTACGCCAGATGCAACAGATGAAGAAAAACAAGCAGCTGATGCTGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTA 3901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA
   ----ACTAATGAAGAAAAAGGTAACGATATTGGACCAGTTAGAGCAGCATATGAAGAAG
                                ATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGAACG
                                                                    TTGCTAACTGAAATGCAAAATAAATAACTGAAATACTTAATAATAATAATGAGACT-----
                                                                                                TTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTATCAA
                                                                                                                                         TTCAAGCAATTGACCCAATTCAAGCATCAACAGATGTTAAAACGAATGCAAGAGC-GGAA
                                                                                                                                                                                                              ĂTCAAAATATTGAAAATGCACAGTCAATCGATGATGTAAACACTGCAAAAGATAATGCAA
                                                                                                                                                                                                                                               ATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATAAAATTCATG
                                                                                                                                                                                                                                                                                 CGACTACTGAAGAAAAAGAACAAGCAAATCAACAAGTAGACGCACAATTAACACAAGGTA
                                                                                                                                                                                                                                                                                                                  CGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAAA
                                                                                                                                                                                                                                                                                                                                                      AAGATGAATTAGCAACAAAAGCAAACGAACAAAAAGCGCTTATTGCACAAACTGCAGATG
                                                                                                                                                                                                                                                                                                                                                                                     AGGAACAACTAGAAAAAGCAAAGAAAAAAAGAAGGAGCGGTCATTGTAAATGCTGCTTTAT 4561
                                                                                                                                                                                                                                                                                                                                                                                                                          CAGTTGCTGATATTCAAGGTATTACTGCAGATACAACAATTAAAGATGTTG-----CGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTATCAAGATATCTTAAATGCACAAACAACTAATGATGTTACGCAAATTAAAGATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACGTGGAAGCTAGCGTTGATAAATCTTCCATCGAAGGAGCTAATGAAATCAATGTCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTARAAATGATGTTGATCAAGCTGTGACAACTCAAAATCAAGCAATTGATAATACAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTCTGGAGCGGGATTAGGAAATTATCAAGGGGCTGTTTCTGTCAATAAGATTGACAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGATCAGAACGCTACAACAGAAGAAAAAGAAGCAGCTATTCAACAATTAGCAACAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTTACAAGCTGGAAAGTCAAATGGAACTGTAGGGGCTACTGTGACTGTTGCCAAATTAA 4141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ÄÄCÄÄGCGGCTAAAGÄTGAAATTGATCAATTÄCAAGCAÄCGCÄÄÄACAAATGTTATCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAAATGGATGTTGATGTCACTGCTTATCAAGCGGACACCCAAGTGACAGGAGCTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGAAGCTAAAGCAAATGCAGAAGCAGCGATTAATGCGGTAACACCAAAAGTTGTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATACTGAAAATGGTAAAGCAAATCAAGCCATTTCAGCAGCAACTACTAACGCACAAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches 1378;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
   4720
                                    4861
                                                                      4665
                                                                                                                                                                                                              4552
                                                                                                                                                                                                                                                                                   4492
                                                                                                                                                                                                                                                                                                                    4621
                                                                                                                                                                                                                                                                                                                                                      4432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3778
                                                                                                                                                                                                                                                 4681
                                                                                                                                                                                                                                                                                                                                                                                                                             4372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3841
```

```
5162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5282
5738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAATTAAGCAAGTTGACCAAAATG---TTCAAACTGCATTAGAAAGCATTAATAATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCAGAAGAAAATAATATTTCAGCTGACACTAATGCAACACAAGATGAAAAGCAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACAACAGATTTATATGCTTATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCATATAATGCTAAAGTAAACGAAGCGGATAACTCTAACGCATCGACTTCAAGTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGCCGGAAATGCAAATGGAGGAAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATTAGATCAAGCTGCAGCTGATAAGAAAACACAAATAGAACAACACCAAATGCATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGTACAAAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAACCAGCAGGTAAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTTAAATAATAATGCAGCAACTACTACAGGTGATGTAACTACTGCTAAAGATACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CANATNATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTTCTACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAAATAGTACTCAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGTCGGAGTTGGAGGAGCAAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCT 5461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGCTACTTCTAAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAAGATAGAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGTCGATCAATCATCAACAAATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACAAGAAATTAATGATGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAATCG
                                                                                                                                                             TAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTG
                                                                                                                                                                                                                            CAATGATTAAACAAATTACAGATCAAGCTAAACAAGGTATTACTGATGCAACAACAACTG
                                                                                                                                                                                                                                                                                TTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGGACAGGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                   TACGAAATGCTTTGGTAAAAAG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGTAGATGCTACTGTTAAACCTAAAGCGAACCAAGCTATTGAAGTTAAAGCAGAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGATAATGGTGACGTTGATGATGCATTAACACAAGGTAAAGCAGCAATTGATGCTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAATAAGACAGTTTCTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>AMATTAATGCAGTTAMAACATTTAGTGAGTACAMAAAAGATGCTTTAGCTAMAATTGMAG</u>
CAACAGAAAAAACAAAAAGCTATCGAAGAATTAGAAACTGCACTAGACCAGATTGAAGCAG
                                                   CGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAA 5920
                                                                                                               CTGAAGTTGAAAAAGCGAAAGCTCAAGGACTTGAAGCATTTGATAACATTCAAATCGACT
                                                                                                                                                                                                                                                                                                                                            CGAPAGATCTATTGATCAAAGTGACCAGTTAACTGCTGAAGAAAAAAACTGAAGCATTAG
                                                                                                                                                                                                                                                                                                                                                                                                      -----CAAATCTCATTCATCTA 5740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5401
5797
                                                                                                                                                                                                                                                                                         5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5437
                                                                                                                                                                                                                                  5677
```

밁

중 음 중

음 성

5

S

음 성 음 성 음 성 음

유

음 성 음

유

음 성

8 8 8 8 8 8 8 8 8 8 8 8

₽

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILLE OF INVESTION: FLURALLY CUES
FILLE REFERENCE: ELLTRA.011A
CURRENT APPLICATION NUMBER: US/09/815,24
CURRENT FILING DATE: 2001-03-21
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR FILING DATE: 2000-10-23
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR FILING DATE: 2000-11-22
PRIOR FILING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR FILING DATE: 2000-11-27
PRIOR FILING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR FILING DATE: 2000-11-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 21
US-09-815-242-8869
; Sequence 8869, Application US/09815242
; Patent No. US20020061569A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                       밁
                                                                                 Ś
Ś
                                                                                                                                                                                                                       ; LOCATION: (1)...(7437)
US-09-815-242-8869
                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: FastSEQ for Windows Version SEQ ID NO 8869 LENGTH: 7437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                            Query Match 0.8%; Score 79.2; DB 3; Best Local Similarity 41.3%; Pred. No. 0.0029; Matches 998; Conservative 0; Mismatches 1378;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Haselbeck, Robert APPLICANT: Ohlsen, Kari L. APPLICANT: Zyskind, Judith
                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: 60/257,931
PRIOR FILING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: Identification of TITLE OF INVENTION: Prokaryotes
                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS: 14110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                              ORGANISM: Staphylococcus FEATURE: NAME/KEY: CDS LOCATION: (1)...(7437)
                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3842 AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTA 390:
                                              3659 TTAATAAAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG
                                                                                         3782 TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA 3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGTAAATGTCAACGCTGATGCTACAACTGAAGAAAAAAGAAGCGTTTACGAATGCTTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTCAGCTACTCATACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTAACGAAGACTTATCACAAAAAAGGAAAATAAGTAATAAAAAAGGATTTGTTACCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTACTGTCAAAAATAGTGCGCTTGAACAACTTAAAGCACAACGTATTAATCCTGAAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGACATTTTATCAAAAGCAACTGAAGATATTTCTGATCAAACTACAAATGCAGAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAAAAATGCTTTGGAAGCAATCAGAGAAGTGGTTAACAAGCAAATAGAAATAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zyskind, Judith W. Wall, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Yamamoto, Robert T.
Xu, H. Howard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Carr, Grant J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Trawick, John D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Essential
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genes
                                                                                                                                                                               Length 7437;
                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ij
                                                                                                                                       42;
                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5857
                                                 3718
```

	S B S B S	00 00 00 00 00 00 00 00 00 00 00 00 00	\$ \$ \$ \$ \$	5 8 8 8 8	8	\$ \$ \$ \$ \$ \$ \$
CAAATAATTCCATTCTTGGGGTGAATATACTCTTCATAATAAACCTCTGCTTTGATTACAG	4682 CGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTGGAC 4741		4259 CGTATCAAGATATCTTAAATGCACAAACAACTAATGATGTTACGCAAATTAAAGATCAAG 4318 4442 AAGATAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATTAATACGA 4501 4442 AAGATAAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATTGTTATTATACGA 4501 4319 CAGTTGCTGATATTCAAGGTATTACTGCAGATACAACAATTAAAGATGTTGCGA 4372 4502 AGGAACAACTAGAAAAAGCAAAGAAAAAAAGAAGGAGCGGTCATTGTAAAGTCTTGCTTTAT 4561	GENANATETEGA A GENATURA GARAGAGT TA TA GARAGAGT TA A GENATA GARAGAGT GARAAGAGT GARAAGAGT GARAAGAGT GARAAGAGT GARAAGAGT GARAAGAAT GARAAGAAAAAGAAAAG	3959 ATGATCAGAACGCTACAACAGAAAGAAAAAAAAAAAAAA	3719 AGATTCAAGCTACGCCAAAAAAAATGCAAATTCAAGCAAAAAAAA
D	Q B Q B 4		9 Db 99 B	\$ \$ \$ \$ \$	0 Q Q Q	
5738 CAACAGAAAACAAAAGCAACTGAAGAATTAGAAACTGCACTAGACCAGATTGAAGCAG 5797 5921 CAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAATTACAG 5980	5618 CAATGATTAAACAAATTACAGATCAAGGTCTGAAGCAACTAATTACGAAGAACTAACT	5438 TĠĠATĀATGGTĠACGTTĠATGATGATGATCĀCĀCAAĠĠTAĀĀĠĊĀĠĊĀĀTĠĊĀĀTTC 5497 5642 TAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAAATG 5701	5321 ATCAGAAGAAAATAATATTTCAGCTGACACTAATGCAACAAGATGAAAAGCAACAAG 5380 5522 AAAATAATGGAAATAATGAAAAGGCAAATGTTAATGTTCTAGCTGAAATAACGAGTCAAG 5581	5342 ATCAAGATAGAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATAG 5401	5021 AAATTAATGCAGTTAAAACATTTAGTGAGTACAAAAAAGATGCTTTAGCTAAAATTGAAG 5080 5222 TTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAA 5281	4781 CAGTACAAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAACCAGGCAGG

Query Match 0.8%; Score 79.2; DB 2; Length 8155; Best Local Similarity 41.3%; Pred. No. 0.003; Matches 998; Conservative 0; Mismatches 1378; Indels 42; Gaps 5; Matches 998; Conservative 0; Mismatches 1378; Indels 42; Gaps 5; Qy 3782 TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATGTGATATTCGAAATGCCAATAAATTTA 3841	REGISTRATION NUMBER: 30,446 REFERENCE/DOCKET NUMBER: pB248PP REFERENCE/DOCKET NUMBER: pB248PP TELECOMMUNICATION INFORMATION: TELEPHONE: (301) 309-8504 TELEPHONE: (301) 309-8512 INFORMATION FOR SEQ ID NO: 63: SEQUENCE CHARACTERISTICS: LENGTH: 8155 base pairs TYPE: nucleic acid TYPE: nucleic acid STRANDEDNESS: double TOPOLOGY: linear S-08-781-986A-63	04Ū ℃D H	S-08-7 Seque GENI TI	QY 6041 ATATTACTACTCAAGGGCAAGTAGATAAAGTATAAAGTATTCAAAAAATCTTAATA 6100
Db 6658 Qy 4862 Db 6713 Qy 4922 Db 6773 Db 6773 Qy 4982 Db 6833	Qy 4622 Db 6485 Qy 4682 Db 6545 Qy 4742 Db 6604 Qy 4802	4 0 4 0 4 0 4	Qy 4202 Db 6071 Qy 4262 Db 6131 Qy 4322 Db 6191 Oy 4382 Db 6251	Db 5831 Qy 4022 Db 5891 Qy 4082 Db 5951 Qy 4142 Db 6011
6658	1622 ATBAARTTAAAGCAGAATTGAGTGGAAGCAATTAATGAGAAGCATAAATTAAAGCAGAATTGAATGGAAGCAATAAGAGAGCAATAAGAGAGAG	442 AAGATAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATACGA 4501	202 CAAAAGCTCTTTTAGCAACCACTCAAGTGACTGCTGCAGTGACGGACG	831 ATGAAGCTAAAGCAAATGCAGAAGCAGCGATTAATGCGGTAACACCAAAAGTTGTGAAGA 5890 022 AAAAAATGGATGTTGATGCACAGCGACTATCAAGCGGACACCCAAGTGACAGGAGCTTTAA 4081

S

문

8 8 8 8 8

밁

```
7610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5582
7970
                                                                                                                                                                                                                                                                                                                                                                                                                        5861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7013
                               TTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAAGGATTTGTTACCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAG
AGAAAAATGCTTTGGAAGCAATCAGAGAAGTGGTTAACAAGCAAATAGGAATAATTAAAA
                                                                                          CTACTGTCAAAAATAGTGCGCTTGAACAACTTAAAGCACAACGTATTAATCCTGAAGTTA
                                                                                                                                   ATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATA
                                                                                                                                                                                    AAGACATTTTATCAAAAGCAACTGAAGATATTTCTGATCAAACTACAAATGCAGAAATCG
                                                                                                                                                                                                                               GATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATT
                                                                                                                                                                                                                                                                                GTGTAAATGTCAACGCTGATGCTACAACTGAAGAAAAAAGAAGCGTTTACGAATGCTTTAG
                                                                                                                                                                                                                                                                                                                            CAACAGAAAAACAAAAAGCTATCGAAGAATTAGAAACTGCACTAGACCAGATTGAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                        CGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGAAGTTGAAAAAGCGAAAGCTCAAGGACTTGAAGCATTTGATAACATTCAAATCGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAATGATTAAACAAATTACAGATCAAGCTAAACAAGGTATTACTGATGCAACAACAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAAAGAATCTATTGATCAAAGTGACCAGTTAACTGCTGAAGAAAAAACTGAAGCATTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGTAGATGCTACTGTTAAACCTAAAGCGAACCAAGCTATTGAAGTTAAAGCAGAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGATAATGGTGACGTTGATGATGCATTAACACAAGGTAAAGCAGCAATTGATGCTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAATTAAGCAAGTTGACCAAAATG---TTCAAACTGCATTAGAAAGCATTAATAATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCAGAAGAAAAATAATATTTCAGCTGACACTAATGCAACACAAGATGAAAAGCAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACAACAGATTTATATGCTTATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCAAGATAGAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGCATATAATGCTAAAGTAAACGAAGCGGATAACTCTAACGCATCGACTTCAAGTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAATTAATGCAGTTAAAAACATTTAGTGAGTACAAAAAAGATGCTTTAGCTAAAATTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGTCGATCAATCATCAACAAATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAGCTA 7012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACAAGAAATTAATGATGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGCTACTTCTAAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGCTGAAGCGAAACAAAACTTGCTGAATTAAAACAAACTGCGGATCAAAATGTTAATC
                                                                                                                                                                                                                                                                                                                            5980
                                                                                                                                                                                                                                                                                                                                                                                                                        5920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6952
8029
                                           6160
                                                                                          7969
                                                                                                                                     6100
                                                                                                                                                                                                                                  6040
                                                                                                                                                                                                                                                                                7849
                                                                                                                                                                                                                                                                                                                                                                          7789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7072
                                                                                                                                                      Ś
                   밁
                                                     5
                                                                                                             밁
                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
```

8 8 8 8 8 8 8 8

밁 á 밁 δ B Ş 밁 S 멍 S 밁 S 밁 S 밁 S 밁 ঠ

Ş

```
US-10-329-624-63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 23
US-10-329-624-63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 63, Application US/10329624 Publication No. US20040043037A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                         Query Match 0.8%;
Best Local Similarity 41.3%;
Matches 998; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE: (240) 314
TELEPAX: (301) 309-8
INFORMATION FOR SEQ ID NO: 63:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette, 3.50 inch, 1.4M

COMPUTER: HP Vectra 486/33

OPERATING SYSTEM: MSDOS version 6.2

SOFTWARE: ASCIT Text

CURRENT APPLICATION DATA:

APPLICATION DUMBER: US/10/329,624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/956,171

APPLICATION NUMBER: 08/956,171

FILING DATE: October 20, 1997

APPLICATION NUMBER: 60/009,861

FILING DATE: January 5, 1996

APPLICATION NUMBER: 08/781,986

FILING DATE: January 3, 1997

ATTORNEY/AGENT INFORMATION:

NAME: Mark J. Hyman

REGISTRATION NUMBER: 46,789

REFERENCE/DOCKET NUMBER: PB248P1D

TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Steven C. Barash
Michael R. Fannon
TITLE OF INVENTION: Staphylococcus aureus Polynucleotides and Sequences
NUMBER OF SEQUENCES: 5256
CORRESPONDENCE ADDRESS:
CORRESSEE: Human Genome Sciences, Inc.
STREET: 9410 Key West Avenue
CITY: Rockville
5771
                                            3902
                                                                                                                                                                         5651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6161
                                                                                                                                                                                                                   3782
                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE DESCRIPTION: SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Charles Kunsch
                                                                                                                                                                                                                 TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGCAGATGCAGATGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTCAGCTACTCATACTT
  ATACTGAAAATGGTAAAGCAAATCAAGCCATTTCAGCAGCAACTACTAACGCACAAGTTG
                                                                                                                              AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTA 3901
                                                                                                                                                                         TTAATAAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG
                                                                                                                                                                                                                                                                                                                                                                                        STRANDEDNESS: double TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE: Maryland COUNTRY: USA
                                          AAGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG
                                                                                      AGATTCAAGCTACGCCAGATGCAACAGATGAAGAAAAACAAGCAGCTGATGCTGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patrick S. Dillon
Craig A. Rosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (240) 314-1224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Choi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       309-8439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6178
                                                                                                                                                                                                                                                         Score 79.2; DB 7;
Pred. No. 0.003;
0; Mismatches 1378;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PB248P1D1
                                                                                                                                                                                                                                                                                                                                                                      63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.4Mb
                                                                                                                                                                                                                                                                                                   Length 8155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       storage
                                                                                                                                                                                                                                                             42;
                                                                                                                                                                                                                                                           Gaps
                                                                                      5770
                                                                                                                                                                           5710
                                                                                                                                                                                                                   3841
    5830
                                            3961
                                                                                                                                                                                                                                                           S
```

8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

GETTAATATATTATGCAGCAACTACTACAGGTGATGAAAACCCTCCTAAAGATACAGGCAGCAACTACTACAGGTGATGAAAAACCCTCCTACATAAAAACTACTACAGGTGATGAAAAACCCTCCTGCTTTAATAAAAAACCCTCCTGCTTTAATAAAAACCAGGTAAAAAAAA	4682 CGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTGGAC 4741	6311 CAĞTTGCTGATATTCAAGGTATTACTGCAGATACAACAATTAAAGATGTTGCGA 6364 4502 AGGAACAACTAGAAAAAGCAAAAAAAAAAAAAAAAGAAGAAGAACTATTATAAACTGCTGCTTTAT 4561	CTAAAATGATGATGATGATAAATCTGAGAAGGAGCTAAATGAAATCAATGAGAAATGAAATGATAAAAGATCAAAGCTGTGACAAAATCAAAGCTAAAATCAAATGATAAATGATAAATGAAATCAAATGAAATGAAATGAAATGAAATGAAATGAAATGAAATGAAATGAAATGAAAAGAAAAAA	3962 TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAAATCTGAAAGCC 4021
Db 7790 GTĠTAAATĠTCAACĠĊTGAŤĠAŤCĂĠCTĞAÄĠAAAAĠGAGCGTŤTĂCGAATGCTTTAĞ 7849 Qy 5981 GATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAACAGAACGATGATT 6040 Db 7850 AAGACATTTTATCAAAAAGCAACTGAAGATATTCTGATCAAACTACAAATGCAAAATCG 7909 G041 ATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCCTGAAATGCAAAATCG 7909 Db 7910 CTACTGTCAAAAATAGTGGGCAAGATAAAGTGATAAAAGCTATAAAAATCCTGAAGTTA 7969 G101 TTAACGAAGACTTATCACAAAAAAAGAAAAAGGAATAAAGGAATTAATACCAATA 6160 G1			Db 7193 ÀAGCTACŤTCTÁÄÁĠŤGAĊÁŤŤĠAAGTŤCAÁÁTTCĂŤAÁŤGACŤÄAGAŤĀACG 7252 Qy 5402 CAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGAGAGCTTCTGGAAGTACTACCT 5461 Db 7253 ATTACACAATTCCAACAGGTÁAAAAAGAATCAACAGATTTATATGCTTATGCAG 7312 Qy 5462 TGAATAAGACAGTTTCTTCTATGTTGATAACAAACTAAAAATTATATGCAGGTAAAAATTATTTCAAACTGATATTGCAACAAAATTAAAAAAAA	

ş

8

음 성

밁

8 & 8

B 8 8 8

QY 7448 ATGTAGATATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTG 7507	Qy 7388 GAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAA 7447	Oy 7328 AAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAG 7387	QY 7268 TITTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAAGTTAAATGATGCTACGA 7327 Db 2762 CATATAATACAAGTAAACAAGAAATTCAAAATAGCAATGCTTCAACTACAGAAGAAAAAC 2821	208 TAAATAATTTTGGAACAGCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAAA 	Query Match 0.8%; Score 74.8; DB 3; Length 7104; Best Local Similarity 41.6%; Pred. No. 0.017; Matches 992; Conservative 0; Mismatches 1367; Indels 27; Gaps 7;	LENGTH: TYPE: DN ORGANISM 09-815-24	FILING DATE: 2001-02-16 R OF SEQ ID NOS: 14110 ARE: FastSEQ for Windows Vers NO 4580	FILING DATE: 2000-11-27 APPLICATION NUMBER: 60/257, FILING DATE: 2000-12-22 APPLICATION NUMBER: 60/269	FILING DATE: 2000-05-26 APPLICATION NUMBER: 60/242,5 FILING DATE: 2000-10-23 APPLICATION NUMBER: 60/253,6	FILING DATE: 2000-03-21 APPLICATION NUMBER: 60/206,84 FILING DATE: 2000-05-23 APPLICATION NUMBER: 60/207,72	222	APPLICANT: Yamamoto, Robert T. APPLICANT: Xu, H. Howard TITLE OF INVENTION: Identification of Essential Genes in TITLE OF INVENTION: Prokaryotes	Wall, Daniel Trawick, John D. Carr. Grant J.		; Sequence 4580, Application US/09815242 ; Patent No. US20020061569A1	ULT 24 09-815-242-4580	8030 ATGCAGATGCAGATGCAT	Qy 6161 GTTCAGCTACTCATACTT 6178	Db 7970 AGAAAAATGCTTTGGAAGCAATCAGAGAAGTGGTTAACAAGCAAATAGGAATAAATTAAAA 8029
D Q D .	S B 8	B &	D Qy	D Qy	g &	Db Qy	D Q	p Qy	Db Qy	Qу	D Qy	D Qy	B &	? ₽	γQ	유 &	Db	ફ	망
016 TTGCGAAAGATGAATTAGCAACAAAAGCAAAAAGGGAACAAAAAGCACTTATTGCACAAACTG 582 TAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTTGGCTA 584 TAACTTCTACAACTGTAAATGGAGGAAACGTATCTCCAACTTCGTGCAAAAAGCTTTTGGCTA 585 TAACTTCTACAACTGAAGAAAAAGAAACGAAATCAACAAGTAGATGCAGAAT 676 CAGATGCGACTACTGAAGAAAAAAAAAAAGAAATCAACAAGTAGATGCAGAAT	8462 TTTCAGAAGTCAATGCTCTTGCTTTAAATGATAGAAAGAA	402 AAITCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACGAAAAAAAA	. a			8162 CAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAG 8221	8102 ATGCAGATAATGTGAATATGGAAGCAACACATAAAATGAAAGTAACAGCAGTTTCTAAAG 8161 	8042 CAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTC 8101	7982 CTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAG 8041	7925 CTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGA 7981 	7865 TGAATTCAGAGGTTGAAATTGAGAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCC 7924	7805 AAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAA 7864	3239 AAACAGCAATTGATGCTAATAACGGTGCAACAACAGAAGAAAAAGCAGCTGCGAAACAAC 3298	79 CTGATGCAAATGTTAAACCAACAGCGAAACAAGCAATTGCTGATAAAGTACAAGCGCAAG	88 CCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTAT	7628 CAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTG 7687	59 CAAAAGATAAAGTTGATCAAGCAGTAGTTACTGCAAACGCTGATATAGATAATGCTGCAG	68 TTACTGTTGAAAATTCTTTTGTGAAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTA	3002 AACGTAAAACTGCAATTGAAGCAATGAATGATTCGACTACTGAAGAACAACAAGCTG 3058

```
RESULT 25
US-09-815-242-8291
; Sequence 8291, Application US/09815242
; Patent No. US20020061569A1
; GENERAL INFORMATION:
; APPLICANT: Haselbeck, Robert
; APPLICANT: Ohlsen, Kari L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       청 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                              유
                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                              ঠ
                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4607
                                                                                                                                                                                                                                                                                                                       4847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TÄÄCGCÄÄGGTÄÄTCAÄÄÄTÄTTGÄÄAATGCACAGTCÄATCGATGATGTÄÄACACTGCÄÄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAG
                                                                                                                                         AAGCAATTAAGCAAGTTGACCAAAATGTTCAAACTGCATTAGAAAG
                                                                                                                                                                    TAAAATTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAG 9581
                                                                                                                                                                                                                              CGGATGCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                          TTCATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTAAAATTAATGCAGTTAAAACATTTAGTGAGTACAAAAAAGATGCTTTAGCTAAGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAATATTGACCAATCTTCAACAGATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACAAGAAATTAACGA---TGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GACATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGTACAAAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAGCCAGCAGGTAAAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTTÄÄÄTAATATTÄATGCÄGCAÄCTAČTÄCÄGGTGÄTGTÄÄČTACTGCTAAÄGÄTACÄG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGACTACTAATGAAGAAAAAGGTAACGATATTGGACCAGTTAGAGCTGCATATGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGATAATGCAATTCAAGCAATTGACCCAATTCAAGCATCAACAGATGTTAAAACGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAA
                                                                                                                                                                                                                                                                                        ATCAAGCTACTTCTAAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTA
                                                                                                                                                                                                                                                                                                                                                    AAATAAATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAAACAGAGGGAAACATCA
                                                                                                                                                                                                                                                                                                                                                                                 ÄÄGCTGCÄTATÄÄTGCTÄÄAAGTAACCGAÄGCGGATAACTCTÄÄCGCÄTCGACTTCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAATTCAAAAAATAATATTACTTTAGCATC-----AAGTAGTGAATCGAATGTGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTTAGATCAAGCTGCAGCTGATAAGAAAACACAAATAGAACAACACCAAATGCGTCAC
                                                                                                                                                                                                   ĊAĠĂŤĊAĠĂĀĠĂĀĀĀĀŤĀĀŤATTTĊĀĠĊŤĠĀĊĀĊTĀĀŤĠĊĀĀĊĀCĀĀĠĀTĠĀĀĀĀĠCĀĀĊ
                                                                                                                                                                                                                                                             ACGATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACAACAGATTTATATGCCTATG
                                                                                                                                         5072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4189
                                                                                                                                                                                                                                 9535
                                                                                                                                                                                                                                                                                           9475
                                                                                                                                                                                                                                                                                                                         4906
                                                                                                                                                                                                                                                                                                                                                                                   4846
                                                                                                                                                                                                                                                                                                                                                                                                                                             4786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4309
                                                                                                                                                                                                   5026
                                                                                                                                                                                                                                                             4966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)...
US-09-815-242-8291
                                  밁
                                                             á
                                                                                              밁
                                                                                                                   ঠ
                                                                                                                                                        문
                                                                                                                                                                                  Ś
                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                              3059
                                                                                                                                                                                                                                               7448
                                                                                                                                                                                                                                                                             2882
      7688
      CCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTAT 7747
                                    CAAATACTGATGTAGATAATGCAAAAACTACTAATGAAGCTACAATCGCAGCCATTACAC
```

```
FILE REFERENCE: ELITRA.011A
CURRENT APPLICATION NUMBER: US/09/815,24:
CURRENT FILING DATE: 2001-03-21
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR PPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/259,308
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR PILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: FastSEQ for Windows Version SEQ ID NO 8291 LENGTH: 7107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: Identification of TITLE OF INVENTION: Prokaryotes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA ORGANISM: Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          / Match 0.8%;
Local Similarity 41.6%;
hes 992; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7208 TAAATAATTTTGGAACAGCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAG
                                                                                                                                                                                                                                                                                                                                                                                          ATGTAGATATTACAACAGAGGACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATATAATACACGTAAACAAGAAATTCAAAATAGCAATGCTTCAACTACAGAAGAAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCAATGCAATTCAAACACAAGCAAAAGTTAAACCTGCAGCTGATACGGAAGTAGAAAACG
                                                                                                                                                                                                                                                                  CAGGTCTTGCTTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAAGAAATTCCCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAATACAAACAGTGATGTAACAACAGCTAAAGACAATGGTATTGCTGCAATTAATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGA
CAGGAAATGTTGCTTTAACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTG
                                                                      CAAAAGATAAAGTTGATCAAGCAGTAGTTACTGCAAACGCTGATATAGATAATGCTGCAG
                                                                                                                                  TTACTGTTGAAAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTA
                                                                                                                                                                                                     AACGTAAAACT---GCAATTGAÁGCAATGAATGATTCGÁCTÁCTGÁÁGAACAACAAGCTG
                                                                                                                                                                                                                                                                                                                                 TACAAGCGGCAACAACTAAGAAATCGGATGCTAAAAGCGGAAATCGCTCAAAAAGCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGCTGCATATACAGAATTAGATACTAAAAAGCAAGAAGCAAGAACAAATCTTGATGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Yamamoto, Robert
Xu, H. Howard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Carr, Grant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zyskind, Judith W. Wall, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Trawick, John D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ...(7107)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 74.8; DB 3;
Pred. No. 0.017;
0; Mismatches 1367;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Essential
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
```

2881

2821

2761

3001

7507 2941

3178

3118

```
8762
                                                                                                                                                                                                                                                                                                                                                                                              4076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8402
TTGGAGATAAATTAGAAACGATTGCAAGAGATAATACGATTGTAAGAGTCAACGGAGACG
                                                                                                                                                                                                                                                                                                                        AAAATGAAAATTATGGAAATGTAAAAGGAACTGGAGGAGCCTTAGTCGGAGCGGAAACAG
                                                                                                                                                                                                                                                                                                                                                                                              CAGATGCGACTACTGAAGAAAAAAGAACAAGCAAATCAAC----AAGTAGATGCAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAACTTCTACAACTGTAAATGGAGGAAACGTATCTCAACTTCGTGCAAAAGCTTTGGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTANAGATCAAGCAGTTGCTGATGTTCAAGGTATTACTGCAGATACAACAATTAAAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATCCGTAGTTCGTTTACGAAAGCAAGATTATGAAAATAATGATTACACAAAAAAATATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATAATACAACTGGTGCTACAACTGAAGAAAAAATGCAGCAAAAGATTTAGTTTTAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAATGGAGGAGGAATTGCCGGAGCAGGAGTGAATACTTCTACAGCACAAAGTAATACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAGATACAGCGAAAGATGCAGGTAAAAATTCGATTCAAAGTACACAACCAGCAACAGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTAAAACTATGGTAGAAGTTGAGGAAGGAAATTTGTTCAGAACAAATCGATTGAATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGCAACAGCAGTTACAGACGCGAAAAATAATATTACAGCTGCAACTGATGATAATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGTAACAGGTTCTGTATTGGGAGGAGTTGGAGTCACCAAGGCAGAAGCTACTGCTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCAGATAATGTGAATATGGAAGCAAACACATAAAATGAAAGTAACAGCAGTTTCTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATAATGCTGTGACACAAGCAAATAACAACATTGAAGCTGCTAATAGTCAAAATGATGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAAAGATGCCGGAAGCTCTTATTTGAAAGTTAGTACAAAATCCGGAAGAAGTATTTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGCTCAAACGCAAGACATTACTGCTGAAGAAATTGCAGCGGCAAATGCGAAT---GTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGCTGAATCTCAAGGAGCTTCTGTAGGAGCAGTAGCAGGGGCAGGAATTATTTCCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAACTAAAGATAATGCGAAACAAGCAATTGCTACGAAAGCGAATGAACGTAAAACAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAATTCAGAGGTTGAAATTGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ANACAGCAATTGATGCTAATAACGGTGCAACAACAGAAGAAAAAAGCAGCTGCGAAACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAGGAAAAAATATTGATGTTA---TTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGATGCAAATGTTAAACCAACAGCGAAACAAGCAATTGCTGATAAAGTACAAGCGCAAG
                                                                                                                                                                         CAGCCGTTGAAAATTATACAAAGAGTACTACAGGAGCATTGGTTGCAGGAAATTGGGAAA
                                                                                                                                                                                                                                                  TAACGCAAGGTAATCAAAATATTGAAAATGCACAGTCAATCGATGATGTAAACACTGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTĞCĞAAAĞATĞAATTAGCAACAAAAĞCAAGGGAACAAAAAGCACTTATTGCACAAAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCGGTAGCCGGTGTGCATGCACAAGGAACAAACAAAGCATTTACGAGATCAAACAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTAAATCAAATGCTAAAAATGATGTTGATCAAGCTGTGACAACTCAAAATCAAGCAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCAAGCGAAAACAACTGGTGAAGCTAGTATTGATCAAGTAACACCAACAGTTAATAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGTTCAAACTGAAAAAACAACAGCTGATACAGCAATTGATGGTGCACATACAAATGCAG
                                                                                                          AAGATAATGCAATTCAAGCAATTGACCCAATTCAAGCATCAACAGATGTTAAAACGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTCAGAAGTCAATGCTCTTGCTTTAAATGATACAAAGAATGAAGCGAATATAGAATCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTCTAAAGTAGAAGGTTTGGATGAAGATAAAGTAACTGCTAAATCTTCTGTAGTATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8101
                                    8821
                                                                                                          4249
                                                                                                                                                                                                                                                                                                                                                                                              4129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3238
```

```
á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                             Ś
                                                                  밁
                                                                                          S
                                                                                                                                       밁
                                                                                                                                                                    र्
                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                               9536
                                                                    4967
                                                                                                     9476
                                                                                                                                        4907
                                                                                                                                                                          9416
                                                                                                                                                                                                           4847
                                                                                                                                                                                                                                                                                   4787
                                                                                                                                                                                                                                                                                                                   9296
                                                                                                                                                                                                                                                                                                                                                        4727
                                                                                                                                                                                                                                                                                                                                                                                         9242
                                                                                                                                                                                                                                                                                                                                                                                                                            4667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8822 GAACCAAAGGAGGTCTTGTCGGAAAGAATGGTATTTCTGTGAAAAATACAATTTCAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4250 CAAGAGCGGAATTGCTAACTGAAATGCAAAATAAATAACTGAAATACTTAATAATAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAAATATTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGTACAAAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAGCCAGCAGGTAAAACTG
AAGCAATTAAGCAAGTTGACCAAAATGTTCAAACTGCATTAGAAAG
                               TAAAATTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAG 9581
                                                                                                     CGGATGCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAAAAATGAAG
                                                                                                                                                                                                             ATCAAGCTACTTCTAAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTA
                                                                                                                                                                                                                                                                                 TTCATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGTAAAGAATC
                                                                                                                                                                                                                                                                                                                                                        AAGCTGCATATAATGCTAAAGTAACCGAAGCGGATAACTCTAACGCATCGACTTCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                         AAAATTCAAAAAATAATATTACTTTAGCATC----AAGTAGTGAATCGAATGTGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                            CTAAAATTAATGCAGTTAAAACATTTAGTGAGTACAAAAAAGATGCTTTAGCTAAGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAATGAGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAATATTGACCAATCTTCAACAGATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACAAGAAATTAACGA---TGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAÇATGCTATTGTAGAAACTACTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTTAGATCAAGCTGCAGCTGATAAGAAAACACAAATAGAACAACACCAAATGCGTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATTGGAAATGTTGATGTAAATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAA 9061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTTÄÄÄTAATATTÄÄTĞCÄĞCAÄCTACTÄCÄGGTĞATĞTÄÄČTACTGCTAAAGÄTACAĞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAACAAAATCATCCATTGAAGATAAAGCCAGAATTGTTGGAACCGGAAGTGTAAATGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGACTACTAATGAAGAAAAAGGTÄÄCGÄTATTGGACCAGTTÄGÄGCTGCÄTATGAÄGAAG
                                                                    CAGATCAGAAGAAAATAATATTTCAGCTGACACTAATGCAACACAAGATGAAAAGCAAC
                                                                                                                                       ACGATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACAACAGATTTATATGCCTATG
                                                                                                                                                                          AAATAAATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGCTTTGAATGAACTTGATGTAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTG
5072
                                                                                                                                                                            9475
                                                                                                                                                                                                             4906
                                                                                                                                                                                                                                                                                                                                                                                         9295
                                                                                                                                                                                                                                                                                                                                                                                                                              4726
                                                                                                                                                                                                                                                                                                                                                                                                                                                               9241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4666
                                                                                                                                          4966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4429
```

APPLICANT: DeNISE, Sue K.
APPLICANT: ROSENFELD, David
APPLICANT: KERR, Richard
APPLICANT: HOLM, Tom
APPLICANT: HOLM, Tom
TITLE OF INVENTION: METHODS & SYSTEMS FOR INFERRING TRAITS TO BREED & MANAGE NON-BEEF
TITLE OF INVENTION: LIVESTOCK
FILE REFERENCE: MMII110-2
CURRENT APPLICATION NUMBER: US/10/972,079
CURRENT APPLICATION NUMBER: US/10/972,079
CURRENT FILING DATE: 2004-10-22
PRIOR APPLICATION NUMBER: US 60/514,333
PRIOR FILING DATE: 2003-10-24

RESULT 26 US-10-972-079-13288/c

Sequence 13288, Application US/10972079
Publication No. US20050153317A1
GENERAL INFORMATION:
APPLICANT: WMI GENOMICS, INC.
APPLICANT: DeNISE, Sue K.
APPLICANT: ROSENFELD, David

밁 Ś 밁 S 밁 S 밁 δ 밁 S 밁 5 밁 8 밁 S 밁 8 밁 S 밁 ş 밁 Ś 밁 δ 밁 δ B S 멍 Ś 밁 S 밁

Ś

```
; NUMBER OF SEQ ID NOS: 96631
; SOFTWARE: PATENTIN VETSION 3:
SEQ ID NO 13288
; LENGTH: 600
; TYPE: DNA
; ORGANISM: Chicken 198668942
US-10-972-079-13288
         APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohleen, Kari
APPLICANT: Ohleen, Kari
APPLICANT: Zykind, Judith
APPLICANT: Wall, Daniel
APPLICANT: Wall, Daniel
APPLICANT: Yamamoto, Robert
APPLICANT: Yaumamoto, Parior Of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: 60/10/282,122A
CURRENT APPLICATION NUMBER: 60/2078
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR APPLICATION NUMBER: 60/230,347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 27
US-10-282-122A-7578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 0.8
Best Local Similarity 49.5
Matches 186; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 7578, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGTTAACAAAGAACAAGATAAAAAAGTAAAATGATGCTACGAAAAAAATCTTACAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATGCAGGAATCGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGGACAAGAATAATA 7480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTGTAGAAGATAGAAAAAATTCTGAAGGAAAAGGAAACAGAAGTTTTAAAAAACTTTAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACA 7464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAA 7404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGAAAAGAAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19866894217622_1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0.8%; Score 73.2; DB 49.5%; Pred. No. 0.011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1; Mismatches 189;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: DNA
; ORGANISM: Staphylococcus aureus
US-10-282-122A-7578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR FILING DATE: 2001-02-09
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                     S
                                                                                            밁
                                                                                                                                    S
                                                                                                                                                                                     밁
                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn version 3.1
SEQ ID NO 7578
LENGTH: 7446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 804;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3782 TTCAAAGTAAAACAAGTGCTTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA
                                                                                                                                                                                                                                                                                                                                   4319
                                                                                                                                                                                                                                                                                                                                                                                     4079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAAATGGATGTTGATGTCACTGCTTATCAAGCGGACACCCCAAGTGACAGGAGCTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAAGCGAAAGCTAATGCAGAAGCAGCAATTAATGCGGTAACACCAAAAGTTGTTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATTCAAGCTACACCAGATGCAACAGATGAAGAAAAACAAGCAGCTGATGCAGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGTAAATGCTTTGAGTGGAGGAACTCAAGTAGCAGCAGGAGCAGGTTTGGAAGCAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTAATAAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG
                                CGAAGGAACAACTAGAAAAAGCAAAGAAAAAAAAGAAGGAGCGGTCATTGTAAATGCTGCTT
                                                                                                                                         GAAAAGATAAAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTTATTATA
                                                                                                                                                                                          AAGAAAAAGCGTATCAAGATATCTTAAATGCACAAACAACTAATGATGTTACGCAAATTA
                                                                                                                                                                                                                                     TTGCCAAAGATGTCAAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTACTAAATG
                                                                                                                                                                                                                                                                                                                                 <u> АТВАССТВОВА В АТВАТЕТТВОВ ТЕМЕТ В АТВЕТЕ В А</u>
                                                                                                                                                                                                                                                                                                                                                                                   AATCGAATGCGAAAAATGAAGTTGATCAAGCTGTGACAACTCAAAATCAAGCAATTGATA
                                                                                                                                                                                                                                                                                                                                                                                                                           GTTCTGGAGCGGGATTAGGAAATTATCAAGGGGCTGTTTCTGTCAATAAG---ATTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGACGCTGGAAAGAATTCAATTCAAAGCACACCAACCAGCAACAGCAG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTACAGACGCGAAAAATAATATTACAGCTGCAACTGATGATAATGGTGTAGATACAGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACAACAAAGTAAATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ÀTGATCAGAACGCTACAAATGAAGAAAAAAGCAGCTATTCAACAATTAGCAACAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTTACAAGCTGGAAAGTCAAATGGAACTGTAGGGGCTACTGTGACTGTTGCCAAATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATACTGAAAATGGTAAAGCAAATCAAGCCATTTCAGCAGCAACTACTAACGCACAAGTTG
    CGAAAGATGAATTAGCAACAAAAGCAAACGAACAAAAAGCGCTTATTGCACAAACTGCAG
                                                                                              AAGATCAAGCAGTTGCTGATATTCAAGGTATTACTGCAGATACAACAATTAAAGATGTTG
                                                                                                                                                                                                                                                                                       ĂTACAACTĠGCĠĊŦĀCAACŦĠĀAGĀGAAAAATGCAĠCĀAAĀĠAŤTTAĠTTTŦAĀĀĀĠCTĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 72.4; DB 7;
Pred. No. 0.045;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches 1091; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   See File Wrapper or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 7446;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PALM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----TTA
```

4378

4027 4261 4078 4318 4318 4138 4138 4138 4021 3847 4081 3907 4141 3967

4201

3961

8 8 8 8

```
4787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4919
GTGTGGATAATGGTGACGTTGATGATGCATTAACACAAGGTAAAGCAGCAATTGATACTA
                                                                          AAGTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTG
                                                                                                                                                                                                                                                                                                                                       CAGATCAGAAGAAAAATAATATTTCAGCTGACACTAATGCAACACAAGATGAAAAGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAGCAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTA 5458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGATCAAGATAGAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAATACTA 5398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAPATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGATGCATATAATGCTAAAGTAAACGAAGCGGATAACTCTAACGCATCGACTTCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAATTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTAAAATTAATGCAGTTAAAACATTTAGTGAGTACAAAAAAGATGCTTTAGCTAAAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAATGTCGATCAATCATCAACAAATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACÁACAAGÁAÁTTAATGÁTGCAAAACAAGAÁGTTGATACTGAATTAÁATCAAGCGAAÁA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTAAGCAGGCTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGAATTAGATCAAGCTGCAGCTGATAAGAAAACACAAATAGAACAAAACACCAAATGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGGAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGGCGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAATTGCTAACTGAAATGCAAAATAAATAACTGAAATACTTAATAATAATGAGACT---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACTTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGCATGGCAAGACTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAATTCAAGCAATTGACCCAATTCAAGCATCAACAGATGTTAAAAACGAATGCAAGAGC-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTAATCAAAATATTGAAAATGCACAGTCAATCGATGATGTAAACACTGCAAAAGATAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAATTAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGAGGATAAAATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCGACTACTGAAGAAAAAGAACAAGCAAATCAACAAGTAGACGCACAATTAACACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATCGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTA
                                                                                                                                                                      AAGCAATTAAGCAAGTTGACCAAAATGTTCA---AACTGCATTAGAAAACATTAATAATG
                                                                                                                                                                                                                                                    AAGAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACGAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                      CCTTGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACGATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACAACAGATTTATATGCTTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAAGCTACTTCTAAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGCAGTACAAAAAGTTCAACAACTTCATGCAAATCCTGTTAAGAAACCAGCAGGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGTTTAAATAATAATGCAGCAACTACTACAGGTGATGTAACTACTGCTAAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACGCAAATAATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTTCTA 4918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----ACTAATGAAGAAAAAGGTAACGATATTGGACCAGTTAGAGCAGCATATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGCGAAACATGTAAATGTGGAGGCAAAATCATCTACTGTTGTTGTGAATGCGGCTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4666
```

S

8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

음 성

음 중 음

경 유

중 음 중 음

S

```
APPLICANT: LA ROSA, Thomas J.
APPLICANT: Kovalic, David K.
APPLICANT: Zhou, Yihua
APPLICANT: Zhou, Yihua
APPLICANT: Zhou, Yihua
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules a
TITLE OF INVENTION: Plants
FILE REFERENCE: 38-21 (53222)B
CURRENT APPLICATION NUMBER: US/10/425,115
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 369326
SEQ ID NO 132399
LENGTH: 1130
TYPE: DNA
ORGANISM: Zea mays
FEATURE:
NAMES/KEY: unsure
LOCATION: (1).(1130)
OTHER INFORMATION: unsure at all n location
FEATURE:
CHES INFORMATION: Close ID. META577 523320
S
                                밁
                                                           S
                                                                                                  밁
                                                                                                                                   S
                                                                                                                                                                       В
                                                                                                                                                                                                  S
                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 28
US-10-425-115-132399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 132399, Application US/10425115
Publication No. US20040214272A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: Clone ID: MRT4577_52232C. -10-425-115-132399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            y Match 0.7%;
Local Similarity 44.4%;
hes 366; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5639
                                                                                                                                                                                                         9203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          572
                                                                                                                                                                                                                                           512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACTCAAA
 TAGCAGGAAAAATTAAAAACAGAGGGAAAACATCAATGTATATGCCGGATATGATAAAAATT 944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAGATCTACAAGGAAAAAGTGGTGGCTATGGTGGAATTGGTATTGGAAATGTTGATGTAA
                                                                    ACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATGAGATGGATATTAAAA
                                                                                                                                                                                                                                                                                                                TTGAAAGATAGCACAACAAACAAGGAAAAAAAAGAGCGAAACAATATGACATAAAAAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                   ATAATGTGATTAAGAAAATGTAGAAGCCAAAATCGGAAGACATGCTATTGTAGAAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTAAAACCGATTAAATTAATGCAGAAGATTAAGCTTTGATGATGGAAAGGCAGTAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AT 5700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCAAGTAGATGCTACTGTTAAACCTAAAGCGAACCAAGCTATTGAAGCTAAAGCAGAAG
                                                                                                      CTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTG
                                                                                                                                                                                                         ATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATTCAAAAAATAATATTA 9262
                                                                                                                                                                                                                                             <u>AACATCAAAAAGAAAAACACAAACACATGTACATCATTAACAATAAAACAAAATAACAA</u>
                                                                                                                                                                                                                                                                                                                                                CTGGAAAACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATATTCTTGGAAAAGGAG
                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               all n locations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 70.6; DB 8;
Pred. No. 0.041;
0; Mismatches 455;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Molecules
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and Other Molecules Associated With
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
•-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                        691
                                                                                                                                                                                                                                                                                                                511
                                                                                                                                                                                                                                                                                                                                                                                                                                                       391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5503
                                                                                                                                                                                                                                                                                                                                                  9142
                                                                                                                                                                                                                                                                                                                                                                                      451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N
```

```
RESULT 29
US-10-087-192-463/c
; Sequence 463, Application US/10087192
; Publication No. US20020182586A1
; GENERAL INFORMATION;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                   S
                                                                                                                                                   밁
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                       ; FEATURE:

NAME/KEY: misc_feature

; LOCATION: (1)...(31124)

; OTHER INFORMATION: n = A,T,C or G

US-10-087-192-463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                         S
                                                                                                                                                                               ঠ
S
                              밁
                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: MOTTIS, David W.
APPLICANT: Engelhard, Eric K.
APPLICANT: Engelhard, Eric K.
TITLE OF INVENTION: CANCER
FILE REFERENCE: 529452000122
CURRENT APPLICATION NUMBER: US/10/087,192
CURRENT FILING DATE: 2002-03-01
PRIOR APPLICATION NUMBER: US 09/747,377
PRIOR APPLICATION NUMBER: US 09/747,377
PRIOR APPLICATION NUMBER: US 09/798,586
PRIOR APPLICATION NUMBER: US 09/798,586
PRIOR FILING DATE: 2001-03-02
NUMBER: US 09/798,586
PRIOR FILING DATE: 2001-03-02
                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 2059
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 463
                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                            Matches 160;
                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 31124
                                                                                                                                                     18566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9443 ATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTG 9502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7350 TATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAAT 7409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTCGGCAACTGCCACTAT-TGAAAAAAATGAAGTAAAAATTTAATAATGCGATCCGAGAA 9561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTAATCAGGTAGACTGGTATACGGATAAATATACATGGCATTCTTCTGAAAAAGCATACA 9679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGAATCGGAGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGT 7229
                                                                                                                                                                                                                AGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAATATTAAGCAAACAGCAGCAAATGC 7169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAAATTGACATATCAATCAAAGAGAGAGAAAAAAGGGAAAAAA 9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTAAAAATAATCTGGCAAGATTGGAAGGGAAA--GCTAATAAAAAACGTCGGTAGGAT 9619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGG 7349
                                                                                                                      АGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGT 7289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>ĀŖĀĀĀĀĀĀĀĀGĀĀĀĀTĀĀĀTATATĀAŖŖĀĀĀATĀGĀĀTĀATĀĀTTĀĀĀĀAAĀĀGAĀTĀ</u>
                              0.7%; Score 68.8; DB 5; Length 31124;
nilarity 51.3%; Pred. No. 0.35;
.Conservative 0; Mismatches 152; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AND METHODS
                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 30
US-10-470-048B-427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                         Ş
                                                                                                                                     á
                                                                                                                                                                   맑
                                                                                                                                                                                               Ś
                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 505;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                          5445
5745 AACAATTGGAATTGGAAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTGTAGC 5804
                                                                                                                                                                                                                                  453
                                                                                                                                                                                                                                                                                            393
                                                                                                                                                                                                                                                                                                                                                                                                                      273
```

```
Sequence 427, Application US/10470048B

Publication No. US20050037444A1

GENERAL INFORMATION:
APPLICANT: MEINES ET AL.

TITLE OF INVENTION: A METHOD FOR IDENTIFICATION, ISOLATION AND PRODUCTION OF TITLE OF INVENTION: ANTIGENS TO A SPECIFIC PATHOGEN

FILE REFERENCE: SOUN! 035US
CURRENT APPLICATION NUMBER: US/10/470,048B
CURRENT APPLICATION NUMBER: US/10/470,048B
CURRENT FILING DATE: 2003-07-25
NUMBER OF SEQ ID NOS: 603
SOFTWARE: Patentin version 3.1
SEQ ID NO 427
LENGTH: 4911
TYPE: DNA
ORGANISM: Staphylococcus aureus
US-10-470-048B-427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity 42.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18326 AÁÁÁGACTTTGT 18315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5145 TTTAGTTAGTGATTTCTGAGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAGATCA 5204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7410 TANAGCCATTGT 7421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5205 AAAAACAATAAATACAATTGCCGGAAATGCAAATGGAGGAAAAAGCGGCTGGAGTTGGAGC 5264
                                                                                                                                                                                                                                                                                                                                                                                                   CAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGC 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAACACAACTCAAAAGCAAGATGATAGTTCAGATGCAAGTAAAGTAAAAGGTAATGTTCA 212
                                                                                                                                                                                                                                                                                     TGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGC 562
                                                                                                                                                                                                                                                                                                                                                   AACAACAGAAGAAGCGCCAAAAGCTGAAGAAACAGACAAAGCAACAGAAGA-----AGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATTACAACGGCGAATGATCAAGATAGAAAAAATATCAATGTGACTGCAAAAGATTATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACAGTTGCTCATACAAATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAA 5324
                                                   AAGCAAÁGCAGCAACÁGAÁGAÁGCGCCAÁAÁGCTGAÁGÁÁACAÁGCAAAGCAGCAÁCÁGA
                                                                                                                                                                 TGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAA 568
                                                                                                                                                                                                                              TGAAGGAACAGACAAAGTAGAAACAGAAGAAGCCCCAAAAGCTGAAGAAACAGACAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCAACAGAAGAAAAAGCAGATACAACTGAACAAGCAACAACAGAAGAAGCGCCAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTAAAGATACAACTGAACAAGCATCAACAGAAGAAAAAAGCAAATACAACTGAACAAGC 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTATTGAACAATCTTCTGCAAATTCAAATGAATCTGATATTCCTGAACAAGTTGATGT 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTAGTAGGAGCTACTTTAATTTTCGGTGTTGCAAATGATCAAGCAGAAGCCGCTGAGAA
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 68.2; DB 8; Length 49
Pred. No. 0.2;
O; Mismatches 683; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 4911;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        392
                                                                                                                    626
                                                                                                                                                                                                                                     566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5384
                                                                                                                                                                                                                                                                                                                                                      506
```

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 31
US-10-282-122A-35506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 35506, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                  PRIOR
                                                                                                                                                                                                                        APPLICANT: Xu, H.
TITLE OF INVENTION: Identification of Essential Genes
FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
                                                                                                                                                    INT FILING DATE: 2003-02-20
APPLICATION NUMBER: 60/191,078
FILING DATE: 2000-03-21
APPLICATION NUMBER: 60/206,848
FILING DATE: 2000-05-23
APPLICATION NUMBER: 60/206
FILING DATE: 2000-09-09
APPLICATION NUMBER: 60/242,578
FILING DATE: 2000-10-23
APPLICATION NUMBER: 60/253,625
                                                               FILING DATE: 2000-05-26
APPLICATION NUMBER: 60/230,335
FILING DATE: 2000-09-06
APPLICATION NUMBER: 60/230,347
                                                                                                                                       APPLICATION NUMBER: 60/207,727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAAT 6338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATATTAA 6104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGAAATGTCGGAGTTATTAÇAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGA-AAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTAAGCAGCAATGCTAGAACAACAAATGTTAACTATTCAGCAACAGCATTAAGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAAGTACTTAAAGAAACAGCTAACAAAGAAAACGCACAACCAAGAGCAACATTCCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAAGACTTATCACAAAAAAAGAAAAATAAGTAATAAAAAAGGATTTGTTACCAATAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAGAACAGATGATTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAAGAGCAATTCAAATGCTCAACCATCAGAAACTGAGAGAACTCAAGTTGTAGATACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCATAMAACTTATAAAGAAGAATTCCCTAATGAAGGCACGCTAACTGCATTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TĠĊĀCAĀGACACAGTTĀCTĀĀAĀĀĀĠGAACTĠĠTAĀCTTTACTĠĊGĊĀTĠGĀĠĀTĀTĀAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCTAAAGATTTATATAAAAAATCTGAAGTTACAGAAGCAGAAAAAGCTGAAATTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAACAGACAAAGTAGAAACAGAAGAAGCGCCCAAAAAGCTGAAGAAACAAGCAAAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                  Ohlsen, Kari
Zyskind, Judith
Wall, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zamudio, Carlo
Malone, Cheryl
                                                                                                                                                                                                                                                                                                                               Yamamoto,
                                                                                                                                                                                                                                                                                                                                            Carr, Grant
                                                                                                                                                                                                                                                                                                                                                                                                                                      Haselbeck, Robert
                                                                                                                                                                                                                                                                                                           Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                  Trawick, John
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Liangsu
lio, Carlos
                                                                                                                                                                                                                                                                                                                               Robert
                                                                                                                                                                                                                                                                               in
                                                                                                                                                                                                                                                                               Microorganisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TYPE: DNA ; ORGANISM: Staphylococcus haemolyticus US-10-282-122A-35506
Ş
                                밁
                                                               5
                                                                                                     밁
                                                                                                                                   Ś
                                                                                                                                                                        밁
                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: 60/257,931
PRIOR FILING DATE: 2000-12-22
PRIOR FILING DATE: 2000-02-05
PRIOR FILING DATE: 2001-02-09
PRIOR PPLICATION NUMBER: 60/269,308
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
Remaining Prior Application data removed -
NUMBER OF SEQ ID NOS: 78614
SOFTWARE: Patentin version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 933; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 35506
LENGTH: 4997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR
PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 2000-11-27
 5993
                                                                                                                                                                        2566
                                                                                                                                                                                                                                            2506
                                                                                                                                                                                                                                                                                                                 2446
                                                                                                                                                                                                                                                                                                                                                5695
                                                                                                                                                                                                                                                                                                                                                                                  2386
                                                                                                                                                                                                                                                                                                                                                                                                                      5635
                                                                                                                                                                                                                                                                                                                                                                                                                                                       2326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5215 AATACAATTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAACAGTTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATACGTCAGATGCAACACAAGAAGAAGAAGATGCAGCAATAGCGAAAGTTGATGCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAGCAGCAGCAAGAAAAGCGATTGATGATGCAGCAACTGCTAAAAAAAGAAGCGATAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGGAAGAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCTAGCTGAAAATACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGCAAGAAAAGCAATTGATGATGAAGTCGTTGCTAAGAAAGCAGCAATTGATACTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTACCTTGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTGACAAAGATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGAATGATCAAGATAGAAAAAATATCAATGTGACTGCAAAAGATTATACTATGACCAAT 5394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATACAAATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACG
                                GATGATGCAGCAACAGCTAAGAAACAAGAAATTGATCAACACCCAACAGCTACACAAGAA
                                                                 GCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAATGAAATTACAGGATCTACAAAAG--
                                                                                                                                       GGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTG
                                                                                                                                                                        ACAGCGATTGATCAAGCAACGAATGATGGTGTAGACCAAACGAGAGACTTAGGCAAC
                                                                                                                                                                                                          ATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGCGAAGGGAAATGTC
                                                                                                                                                                                                                                            ACTCAAGAAGAGAAGACGTAGCAAAAGCAAAAGTAGATGTCGAAGCTGCTAAAGCTAAA
                                                                                                                                                                                                                                                                               ATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGACAGGTTCTGTAGCAGTGAATAAG
                                                                                                                                                                                                                                                                                                               CAAGCAATAGATGATAGTGCAAATGCTAAAAAAGCAGCAATTGACAATAATAGTGATGCA
                                                                                                                                                                                                                                                                                                                                                TCTGGTGTAACAACTATTGAAGGAATACAACCTGATACGATTAAGAAATCGTCAGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                   GCTGGAGTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATATAAAAAATAGTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAGCAAAAGCAGCGATTGATCAAGCTACTACAAACAACGATGTAGAGCAAGCCAAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>AGTCAAGTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCGATGCTACAGATGAAGAAAAACAGGCAGCTAAAGATAAAGTTGATGCTGAAGCTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACAAAATAGCGGTACTTCGACTATTACTGGTATACAACCAG-AAGTTACTAAAAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACTATAGCAGTCGGAGTTGGAGGAGCAAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTAACAGCTGCAAAACAAGCAATTACACAAGCAACAACAAATGATAAT--GTAGACCAAG
                                                                                                       <u>AATTCAÁTTTĆÁGTAATTCÁGCĆTGATÁTTGTTÁÁAAÁAGCÁGCÁGCÁAGAAAAGCAATT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
 -CATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTATATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 68.2; DB 7;
Pred. No. 0.2;
0; Mismatches 1318;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            See File Wrapper or PALM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 4997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
 6048
                                    2745
                                                                                                                                                                                                                                                                                                                                                                                      2445
                                                                                                                                                                                                                                                                                                                                                                                                                        5694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5274
                                                                    5992
                                                                                                                                         5934
                                                                                                                                                                                                            5874
                                                                                                                                                                                                                                              2565
                                                                                                                                                                                                                                                                                                                                                                                                                                                          2385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2088
```

중 유

중 유

음 성

5

밁

```
2746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTCAAGGGCAAGTAAAGTGATAAAGTATTCAAAAATCTTAATATTAACGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAGTAGATGAAGAAGCTACTAAAGCGAAACCAACTTATAGATCAAGCTAGTACTAATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTC 6525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGAACGCCATAGATCAAGATGGTACTACTACACAAGAAGAAAAAAGATGCAGCTAAAGCA 3225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGAATCAATAGAAAAAATTAAAGCGAAGCGAAGCGATTGATGATACTGTTACAGCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTAGGTTCTGTTGGTGGTGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGGAATTCAATCGGAGTA 6345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAAAAGCAAAAGTGGATGAAGAAGTAGCTAAAGCAAAACGAGCAATTGATTCATCGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAACTGTTAATAT - - - CAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAGCTAAGAAAATGAAATTGACCAACATCCAACAGCTACACAAGAAGAAAAAAGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACTTATCACAAAAAGAAAAATAAGTAATAAAAAAGGATTTGTTACCAATAGTTCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ĂĊTĊĂĂĠĊAAĀTTCĂAĀTĀĀTĠATĠTĀĠĀTCĀĀĠTĀCAĀĀĀTTCTGAĀĀCTGCTĀCAATĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAAAAGACGCAGCAAAAGCTAAGGTAGATGCTGAAGTACAAAAAGCGAAAGATGCAATT
GTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGGTAAATGTA 7125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTGTCAATAATATTGCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ANACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTGTACACGAAACTCGAGATAATGAAATAACTGCTATTAACAAAATTCAACCTGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATAAAAAGAAATACCAAGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGTTTTCGGA 6465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACGAATGACGCGGTAGATCAAGCGAAAGACTCTGGTGTAACTACTATTAATAATATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGGTATTCAAGTAGATGCAGTTAAAAAAAGCAAATGCTAAACAAGCAATTGATGATGCA
                                                                                                                                                                                                     GGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCT
                                                                                                                                                                                                                                                                                          GATGAAGAAGCAACAAAAGCAAAAGCAGCGATTGATCAAGCTTCTACTAATAATGGTGTA
                                                                                                                                                                                                                                                                                                                                                                      TCTACTGATGTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAATTGATAATAATGAAAATGCTATACAAGAAGAAAAGATGCTGCTAAAACAAAAGTA 3693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTATTAAAAAAGCTGAGGCGAAACAAGCCATCGATGTGGCAGTGTCAGCTAAGAAACAA 3633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTACTGGAATCGGTTCAGCCGGAGCTGGAATTCTTGCAGCCGGAGTATCTGGAGTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGCAAAAACGAATGGAACTACAATAATTTCTTCAATAGAACCAGA-----A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATTCTAAAATTATGACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGAAGTAACAAAAGCTAAGTCAGCAATCGATAAAGCCAACACAAATAATGATGTTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATAGATCAAGTTTCTGATGCTACACAAGAAGAAGAAGATGCAGCGAAAGCTAAAGTTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCAAAAAAGCTGAATCGAAACAAGCAATCGATGATGCTGCTACAGCTAAAAAAGCAGCA
                                                                                                                              GATCAAGCAAAAACATCAGGTGAAACAACAATTTCTTCAATCCAACCAGAAGTTGTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3525
```

8 8 8 8 8 8

Ś

8 8 8 8 8 8 8

8 8 8 8 8

밁

```
TITLE OF INVENTION: tumor suppressor genes a FILE REFERENCE: 5013.1005
CURRENT APPLICATION NUMBER: US/10/221,714A
CURRENT FILING DATE: 2003-01-21
PRIOR APPLICATION NUMBER: PCT/EP01/02955
PRIOR APPLICATION NUMBER: DE 10013847.0
PRIOR FILING DATE: 2000-03-15
PRIOR PELLING DATE: 2000-03-15
PRIOR FILING DATE: 2000-04-06
PRIOR RELING DATE: 2000-04-06
PRIOR APPLICATION NUMBER: DE 10019173.8
PRIOR APPLICATION NUMBER: DE 10032529.7
PRIOR PRILING DATE: 2000-06-30
PRIOR FILING DATE: 2000-06-30
PRIOR PRILING DATE: 2000-06-30
PRIOR APPLICATION NUMBER: DE 10032529.7
PRIOR APPLICATION NUMBER: DE 10043826.1
PRIOR PRILING DATE: 2000-06-30
PRIOR APPLICATION NUMBER: DE 10043826.1
PRIOR PRILING DATE: 2000-09-01
NUMBER OF SEQ ID NOS: 540
SEQ ID NO 409
LENGTH: 7442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-221-714A-409/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
문
                                      Ş
                                                                                                                                                                     ; LOCATION: 1792, 4861.
; OTHER INFORMATION: n
US-10-221-714A-409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 409, Application US/10221714A Publication No. US20040048254A1 GENERAL INFORMATION:
APPLICANT: OLEK, Alexander APPLICANT: PIEPENBROCK, Christian
                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: BERLIN, Kurt
TITLE OF INVENTION: Diagnosis of Diseases Associated with
TITLE OF INVENTION: tumor suppressor genes and oncogenes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                    OTHER INFORMATION: FEATURE: NAME/KEY: unsure
                                                                                                                                                                                                                                                                                                 ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3814 AAAGCAGAAGCAAAACAAGCAATTGATGATGCAGTGACTGCTAAAAAAAGCAGAAATTGAT
                                 9012 TGTTGATGTAAATATGTGATTAAGAAAAATGTAGAAGCCAAAATCGGAAGACATGCTAT
  2679 TATTAÁAAAAÁATAÁAAATCTAÁTAAAAAATAAAAAATCTAAAAATAAAAACGAAATTT
                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCAAAACAATCTATTGATAATGCGACAACAAATGAAGCAGTAGATCAAGCTAAAA 4228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTTCTGATATTATTGGAAAAATGTAGATATTACAACAGAGACAAGAATAATA 7480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAAAACGCGCAATTGATGATGAAGTAATAGCTAAAAAAGGCTGAAATTGATCAAAATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAAATCAAGAAGCTACTAAAGAAGAAAAAAGACGCAGCGAAAGCAAAAGTAGATGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    АССБССАЛАЛАБАБАЛАЛАЛАТТАЛБСАЛАСАБСАБСАЛАТССАББЛАТССББАББАБСА 7185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGCAACTAAAGAAGAAAAAAGATGCAGCTAAAGCGAAAGTAGATGAAGAAGCAACAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAATTAAAGCCATTGTGAAG 7425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAACAGACGGTGCTTCAGCTATAACAAAAATTCAACCAGACGTTGTTAAAAAGTCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGACGAAGTTAACAAAGAACAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAACAAAAGCTAAAAATAACATTGACCAATCTACAACGAATAATGATGTCGATCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGTAGAAGATAGAAAAAAT
                                                                                     Conservative
                                                                                                                                                                                                              4861..4862
                                                                                                                                                                                                                                                                                 chemically
                                                                                                                                                                                            is a
                                                                                                       0.7%;
                                                                                                                                                                                            or g
                                                                                     0
                                                                                  Score 67.6; DB 7;
Pred. No. 0.31;
0; Mismatches 384;
                                                                                                                                                                                                                                                                                 treated
                                                                                                                                                                                              ę
                                                                                                                                                                                              ი
                                                                                                                                                                                              or
                                                                                                                                                                                                                                                                               genomic
                                                                                       384;
                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                   (Homo sapiens)
                                                                                                                             Length 7442;
                                                                                       ;
                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3873
                                            9071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7245
```

```
CURRENT APPLICATION NUMBER: US/09/742,096
CURRENT FILING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: US 08/973,642
PRIOR FILING DATE: 1998-02-06
PRIOR APPLICATION NUMBER: PCT/FR96/00894
PRIOR FILING DATE: 1996-06-12
PRIOR APPLICATION NUMBER: FR 95/07007
PRIOR APPLICATION NUMBER: FR 95/07007
PRIOR FILING DATE: 1995-06-13
NUMBER OF SEQ ID NOS: 29
SOFTWARE: PATENTIN VERSION 3.1
SEQ ID NO 4
LENGTH: 1891
                                                                                                                                                                                                                                                                                                                                                                            RESULT 33
US-09-742-096-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    β
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                       Sequence 4, Application US/09742096
Patent No. US20020155441A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                      APPLICANT: DRUILHE, PIERRE
APPLICANT: DAUBERSIES, PIERRE
TITLE OF INVENTION: MALARIAL PRE-ERYTHROCYTIC STAGE POLYPEPTIDE MOLECULES
FILE REFERENCE: 200773USODIV
TYPE: DNA
ORGANISM: P. falciparum
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9722
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2019
                                                                                                                                                                                                                                                                                                                                                                                                                                                 $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             --AATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGAAGGGAAAGCTAATA 9601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATATGATAAAATTATAATATAAGTAAGACAAATTCTAAGGCTATTGCGGATGCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGGAAACATCAATGTATATGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAAAATAATATTACTTTAGCATCAAGTAGTGAATCGAATGTGAATGTTCATGGGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               АЙЙЙЙАТАВААТСТАЙЙЙЙЙЙЙЙЙЙЙХАЙАТАТСТЙЙЙЙЙЙЙЙЙЙСЙСАТСТВЙЙАА
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAAATATACATGGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGATGGATATTAAAAATTTGGCAAAGCAGTATGCATCTTCTCAATTAATAACCAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCTTGGAAAAGGAGACGCTGCAGCTGCAGCTGCAATATCGAATGTACACATTTCCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTAGAAACTACTGGAA----AACAAGAATATCAAGCATTTACAAGAGCAAAAGTAAATA 9127
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 9487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2560
                                        S
                                                                               밁
                                                                                                             ঠ
                                                                                                                                                  밁
                                                                                                                                                                             र्
                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; NAME/KEY: CDS
; LOCATION: (2)..(18
; OTHER INFORMATION:
US-09-742-096-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 0.7%;
Best Local Similarity 41.9%;
Matches 731; Conservative
                                                                                                                                                                                                                                                       6624
                                                                                                                                                                                                                                                                                                                                                                                            6504
                                                                                                                                                                                                                                                                                                                                                                                                                                                            6444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5913 TGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAATGA 5972
                                              6804 AGCAGAAAATGAGATAAAATCAGGTACTGGAATCGGTTCAGCCGGAGCTGGAATTCTTGC 686
                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 TAATATTGGACAAAATTCAGAAAAACAAGAAAGTGTATCAGAAAATGTACAAGTCAGTGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAAC
                                                                                                                                                  AAATGTTGAAGAÄATCGTÄGCTCCÄÄCTGTTGAÄGAÄAGTGTÄGCTCCAÄCTGTTGÄÄGA
                                                                                                                                                                                    CGGAGTGGCTGCAAAAGGAGCTGGAATTGGAGCAGCAGTGGCAGTTACCAAAGATGAATC
                                                                                                                                                                                                                                                      AAAAAAAGCTGAGATTACAGCAAAACGTTATAGTTCTGTTGCAATTGGAAATGCCGCAGT
                                                                                                                                                                                                                                                                                       AAGTGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGA
                                                                                                                                                                                                                                                                                                                         TTCCGTAAATCAATTTGCAGGAAAGACGGAAGTAGATGTGGGAAGAAGCAAAGATTTTGGT
                                                                                                                                                                                                                                                                                                                                                                                          TTCCTCTTTTGGAGTCGGAGTCGCAGCAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGT 656
                                                                                                                                                                                                                                                                                                                                                                                                                              AAGTGTTGTAGAAAGTGTGGCTCCAAGTGTTGAAGAAAGTGTAGCTCCAAGTGTTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAATGTAGCTCCAACTGTTGAAGAAATCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGTGTTGAAGAAAGTATAGCTTCAAGTGTTGATGAAAGTATAGATTCAAGTATTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACGAATTCAATCGGAGTAGGTACGTTCTGTTGGTGTTGGTGGAAATGTAGGAGTAGGAGC 6386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAACAACAACAATGTTGAAGAAAAGTTGAAGAAAGTGTAGAAGAAAATGACGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTACCAATAGTTCA----GCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGATGATTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAA 6092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ÄÄÄTÄTCTTÄTTAÄGTÄÄTATÄGÄÄGÄÄCCÄÄÄÄGAÄATATTÄTTÄÄCÄÄTTTÄTTÄÄÄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACATTAACTGAAAGTGTAGATGATAATAAAAATTTAGAAGAAGCCGAAGATATAAAGGA
               TCCAAGTGTTGAAGAAAGTGTAGCTCCAAGTGTTGAAGAAAGTGTAGCTGAAAATGTTGA
                                                                                                                 AAACACGAGAGCAAGAGTGAAAAATTCTAAAATTATGACTCGAAACAAGTTAGATGTAAT 680
                                                                                                                                                                                                                      AAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGA
                                                                                                                                                                                                                                                                                                                                                           AAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCGTAGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATGTCTGATGAAGGTTTCGGAGAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAAT 650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCTTCTGATACCAATATTATAAAAAGAAATACCAAGACAAGAGTTGGAA---AAACTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGTGTAGAAGAAATGTAGAAGAAATGTAGAAGAAAATGACGACGGAAGTGTAGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTCTTGTAGAAAATTCTATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTA 6326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCAGGACAAGCCGGAGTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTGGAGGAAAGTCAAGTTAATGACGATATTTTTAATAGTTTAGTAAAAAGTGTTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAACTTTTTAATGAATTATTAAATAGTGTAGATGTTAATGGAGAAGTAAAAGAAAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTTAATATTAACGAAGACTT--ATCACAAAAAAGAAAATAAGTAATAAAAAAAGGATTT 6150
                                                                                 AATTGTAGCTCCAACTGTTGAAGAAAGTGTAGCTCCAACTGTTGAAGA---AATTGTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 64.8; DB
Pred. No. 0.53;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 3; Length 1891;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
               957
                                                                                                                                                                                                                                                       6683
                                                                                                                                                                                                                                                                                                                         6623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                 897
                                                                                                                                                    840
                                                                                                                                                                                    6743
                                                                                                                                                                                                                        780
                                                                                                                                                                                                                                                                                                                                                                                                                              600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6443
                                                                                                                                                                                                                                                                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
```

```
RESULT 34
US-10-415-253-3
US-10-415-253-3
; Sequence 3, Application US/10415253
; Publication No. US20040067236A1
; GENERAL INFORMATION;
; GENERAL INFORMATION;
APPLICANT: Cohen, Joe
APPLICANT: Cohen, Joe
APPLICANT: Cohen, Joe
APPLICANT: Cohen, Joe
TITLE OF INVENTION: Liver Stage Malarial Antigens
FILE OF INVENTION: Liver Stage Malarial Antigens
FILE REFERENCE: 845250
CURRENT APPLICATION NUMBER: US/10/415,253
CURRENT FILING DATE: 2003-04-25
PRIOR APPLICATION NUMBER: PCT/EP01/12349
PRIOR APPLICATION NUMBER: EP00203724.0
PRIOR FILING DATE: 2001-10-23
PRIOR FILING DATE: 2000-10-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 & 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          유 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAATTCCTTGACAGCCGGTGGAGGAGCCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TACAACAGAGAACAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGCGAAAGTACAATTACGGAAATATTTGAAAATTTAGAAGAAATTGCAGTAGAAAGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGAATTAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGA-----TAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCAGGTATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAAGTTAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACTATTACTAATGATACTATAGAGGAAAAATTAGAAGAACTCCACGAAAATGTATTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCTGTAGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAACTACAGCTGAAAGTGTAACTACTTTTAGTAATATTTAGAGGAGATACAAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADATGCAGGAATCGGAGCAGCAGTCGGAGCCAATGTCTTGGTAAATAATTTTGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGTACGAGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAATATTAAGCAAACAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGACAATCTTTTAAGTAATTTATTAGGTGGTATCGAAACTGAGGAAATAAAGGACAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTTAACACTATAAATAGTTCTGTGATAGCTCGAGTTCACAATAACTCTGATTTGACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAATCGTAGCTCCAACTGTTGAAGAAAGTGTTGCTGAAAAACGTTGCAACAAATTTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCGTAGCTCCAAGTGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGATCATAGTACTTTACACTCTTCTACTGATGTAAATGTAAAAGCTCTTAATAAAATTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCCGGAGTATCTGGAGTGGTTTCTGTCAATAATATTGCAAATAAGGTAGAAACAGATAT
                                                                                                                                                                                                                                                                                                                                                           TGCTTT 7643
                                                                                                                                                                                                                                                                                                                                                                                                AGCATTTTTTAGTGAAATATTTGATAATGTAAAAGGAATACAAGAAAATTTATTAACAGG
                                                                                                                                                                                                                                                                                                                                                                                                                             AAATTCTTTTGTGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAAAGTAGAGGAAACAGTAGAAATTAGCGGAGAAAGTTTAGAAAACAATGAAATGGATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCCGCATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAAAAAGTTGCAGAAATTTAGAGAAATTAAACGAAACTGTATTTAATACTGTATTAGA
                                                                                                                                                                                                                                                                                                                           TATGTT 1743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAAGTAAAAGAAGAGGTCGCTACCACTTTAATAGAAACTGTGGAACAGGCAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1017
                                                                                                                                                                                                                                                                                                                                                                                                  1737
                                                                                                                                                                                                                                                                                                                                                                                                                                     7637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 10
SOFTWARE: FastSEQ for Wind
SEQ ID NO 3
LENGTH: 1712
TYPE: DNA
ORGANISM: T9/96 Parasite
                                                                         á
                                                                                                                                                                               밁
                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-415-253-3
                                        밁
                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 617; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6413
                                                                                                                                                                                                                                                                                          6830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6233 CTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAATTCTATATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6173 ATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGAGTGGCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                  632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         212
                                                                                                                                                                                   809
                                                                                                                                                                                                                                                       749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAATACCAAGACAAGAGTTGGAA----AAACTACAATGTCTGATGAAGGTTTCGGAGAAG
                                                                                                                                              CTGATGTAAATGTAAAAGCTCTTAATAAAATTTCGAATTCCTTGACAGCCGGTGGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGTTGGTGTTGGTGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAATATTATAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATATTTTTAATAGTTTAGTAAAAAGTGTTCAACAAGAACAACAACAACAATGTTGAAGAAA
         TAGCTCGAGTTCACAATAACTCTGATTTGACTTCCGTACGAGAAAAAGTAAATGTAACGG
                                                                                                                                                                                                                  TCAATAATATTGCAAATAAGGTAGAAACAGATATCGATCATAGTACTTTACACTCTTCTA
                                                                                                                                                                                                                                                                                                                          GTGTAGCTCCAACTGTTGAAGA---AATTGTAGTTCCAAGTGTTGAAGAAAGTGTAGCTC
                                                                                                                                                                                                                                                                                                                                                  CTAAAATTATGACTCGAAACAAGTTAGATGTAATAGCAGAAAATGAGATAAAATCAGGTA 6829
                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGGAGCAGCAGTGGCAGTTACCAAAGATGAATCAAACACGAGAGCAAGAGTGAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGAAGTAGATGTGGAAGAAGCAAAGATTTTTGGTAAAAAAAGCTGAGATTACAGCAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGTTGAAGAAGTGTAGCTCCAAGTGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGAGTCGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGTAGCTCCAACTGTTGAAGAAATTGTAGCTCCAAGTGTTGTAGAAAGTGTGGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGTTGATGAAAGTATAGATTCAAGTATTGAAGAAAATGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGAGTAGTAGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGTTGAAGAAAGTGTAGAAGAAAATGACGAAGAAAGTGTAGAAGAAATGTAGAAGAAA
                                            AAAGTGTTGCTGAAAACGTTGCAACAAATTTATCAGACAATCTTTTAAGTAATTTATTAG
                                                                                                              AAAATGTTGAAGAAATCGTAGCTCCAAGTGTTGAAGAAATCGTAGCTCCAACTGTTGAAG
                                                                                                                                                                                                                                                                                      cregaarceerreaeceeaecregaarrcrrecaeceeaerarcreeaerecre
                                                                                                                                                                                                                                                                                                                                                                                                  CTGTTGAAGAAAGTGTAGCTCCAACTGTTGAAGAATTGTAGCTCCAACTGTTGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAATCGTAGCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GITATAGTICIGITGCAATIGGAAATGCCGCAGTCGGAGTGGCTGCAAAAGGAGCTGGAA 6705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGTAGCTGAAAATGTTGAAGAAATCGTAGCTCCAAGTGTTGAAGAAAGTGTAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGCCGGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCAGGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTAGAAGAAATGACGACGGAAGTGTAGCCTCAAGTGTTGAAGAAAGTATAGCTTCAA
                                                                           CCGCAGGTCTTGCAGCAGTTACCGGAGTGGTTTCTGTTAACACTATAAATAGTTCTGTGA 7069
                                                                                                                                                                                     AAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTG
                                                                                                                                                                                                                                                         CAAGTGTTGAAGAAAGTGTAGCTGAAAATGTTGAAGAAAGTGTAGCTGAAAAATGTTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Parasite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches 851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 64.4; DB 7;
Pred. No. 0.59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1712;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6232
                                                                                                                                                                                                                                                                                                                                 748
                                                                                                                                                                                                                                                                                                                                                                                                                                        6769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6292
                                                                                                                                                                                                                                                                                                                                                                                                       691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 211
                                                                                                                                                                                        868
                                                                                                                                                                                                                         6949
                                                                                                                                                                                                                                                                                              6889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        511
                                                                                                                    928
                                                                                                                                                                                                                                                             808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            w
```

```
RESULT 35
US-10-425-115-115706/c
US-10-425-115-115706, Application US/10425115
; Publication No. US20040214272A1
; GENERAL INFORMATION:
                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                             US-10-425-115-115706
                                                                                                                                                                                                                                                                                                                             APPLICANT: La ROSA, Thomas J.
APPLICANT: Kovalic, David K.
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Mc
TITLE OF INVENTION: Plants
FILE REFERENCE: 38-21(53222)B
                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/10/425,115
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 369326
SEQ ID NO 115706
LENGTH: 1121
TYPE: DNA
                                                Matches 290;
                                                                                                                                                         FEATURE:

NAME/KEY: unsure
LOCATION: (1)...(1121)

OTHER INFORMATION: unsure at all n locations
                                                                                                                          OTHER INFORMATION: Clone ID: MRT4577_37006C.1
                                                                                                                                                                                                                        ORGANISM: Zea mays
                                                                 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1289
7110 AGAAAAAGTAAATGTAACGGCAAAAAGAGGGAAAAAAATATTAAGCAAACAGCAGCAAATGC 7169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGGTATCGAAACTGAGGAATAAAGGACAGTATATTAAATGAGATAGAAGAAGTAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTT 7643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGGAGAAAGTTTAGAAAACAATGAAATGGATAAAGCATTTTTTAGTGAAATATTTGATA 1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAATATTAAAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTGTGAAAAGCAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATTAAACGAAACTGTATTTAATACTGTATTAGATAAAGTAGAAGAACAGTAGAAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cricracregregrifeegaacrecaegricricececarcaegaacaeregeagria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGAAAATTTAGAAGAAATGCAGTAGAAAGTAATGAAAAAGTTGCAGAGAATTTAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGATATTATTGGAAAAAATGTAG-----ATATTACAACAGAGGACAAGAATAATATCA 7483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTTAATAGAAACTGTGGAACAGGCAGAAGAAGAGAGCGAAAGTACAATTACGGAAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGTAAAAGCGGATAGAGAGATACTCAGGGAAAGGAATTAAAGCCATTGTGAAGACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGTAAATGATGCTACGAAAAAATCTTACAATCAGCAGGTATTTCTACAGAAGATACTT 7369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAAATTAGAAGAACTCCACGAAAATGTATTAAGTGCCGCTTTAGAAAATACCCAAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAA 7309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCGGAGCCAATGTCTTGGTAAATTAATTTTGGAACAGCTGTAGAAGATAGAAAAAATTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAATGTAGTCACCACAATACTAGAAAAAGTAGAAGAAACTACAGCTGAAAGTGTAACTA 1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAAAGAGGAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGGAGGAGCAGCAA 7189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGTAAAAGGAATACAAGAAAATTTATTAACAGGTATGTT 1568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTTTAGTAATATTAGAGGAGATACAAGAAAATACTATTACTAATGATACTATAGAGG
                                                Conservative
                                                            0.7%;
                                               Score 63.8; DB 8;
Pred. No. 0.63;
0; Mismatches 353;
                                                                                                                                                                                                                                                                                                                                                                 Molecules
                                                                                                                                                                                                                                                                                                                                                              and Other Molecules Associated With
                                                                         Length 1121;
                                                Indels
                                               ა
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                         TYPE: DNA
                                                                                           FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   768
```

```
7470 CAAGAATAATATCACTTCTACTGGTGGTTTGGGAACTGCAGGTCTTGCTTCCGCATCAGG 7528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                948
353 AACAATAACACAACTCAATAAAATATCCTACATACTAGTATAATAAAA 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GANAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAACAGC 7649
                                                    TGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGGA 7469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAAAATCTTACAATCAGCAGG 7349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGT 7229
                                                                                                              ATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTAA
                                                                                                                                                                                                                            <u>AAAAAACCAAACATACAAAAACCTGATAACAAATAAAACATTAAGAGGTATCTTCATACC</u>
                                                                                                                                                                                                                                                                                                                                                                                            AACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTGT 7589
                                                                                                                                                                                                                                                                                                                                                                                                                                                TATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAAT 7405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGT 7289
                                                                                                                                                                                                                                                                                                                                        414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              709
```

```
US-10-425-115-151933/c

(Sequence 151933, Application US/10425115

(Publication No. US20040214272A1

(GENERAL INFORMATION:
APPLICANT: La Rosa, Thomas J.
APPLICANT: Kovalic, David K.
APPLICANT: Cao, Yongwei

(TITLE OF INVENTION: Nucleic Acid Molecules and TITLE OF INVENTION: Nucleic Acid Molecules and TITLE REFERENCE: 38-21(53222)B

(CURRENT APPLICATION NUMBER: US/10/425,115

(CURRENT FILING DATE: 2003-04-28

NUMBER OF SEQ ID NOS: 369326

(SEQ ID NO 151933

LENGTH: 996
                                                                               ; OTHER INFORMATION: US-10-425-115-151933
Query Match
Best Local Similarity
Matches 310; Conserv
                                                                                                                                  NAME/KEY: unsure LOCATION: (1)..(996) OTHER INFORMATION: u
                                                                                                                                                                                           ORGANISM: Zea mays FEATURE:
   0.6%;
ilarity 44.0%;
Conservative
                                                                                                Clone
                                                                                                                                      unsure at all n locations
                                                                                                Ħ.
   <u>,</u>
                                                                                            MRT4577_70090C.
   Score 63.2; DB 8;
Pred. No. 0.76;
0; Mismatches 394
                                                                                                                                                                                                                                                                                                                                                                                     and Other Molecules Associated
     394;
                                       Length 996;
     Indels
   1,
   Gaps
   ۲,
                                                                                                                                                                                                                                                                                                                                                                                         With
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                      RESULT 37
US-10-424-599-57885/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                        APPLICANT: LA Rosa Thomas J
APPLICANT: Kovalic David K
APPLICANT: Chou Yihua
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53223)
CURRENT APPLICATION UNMBER: US/10/424,599
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 57885
LENGTH: 673
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                  Sequence 57885, Application US/10424599 Publication No. US20040031072A1 GENERAL INFORMATION:
                                                                          ORGANISM: Glycine
                     NAME/KEY: unsure LOCATION: (1)...
OTHER INFORMATION: unsure at all n locations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAATTCTA 7708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAATTCTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACAAGAATAATATCACTTCTACTGGTGGTTTTGGGAACTGCAGGTCTTGCTTCCGCATCAG 7528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   АДАЛАСКАЛЛАЛАЛАЛАЛАЛАЛАЛАЛАЙТОНОВАТАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛАЛА 626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAAAGCCATTGTGAAGACTTCTGATATTATTGGA-AAAAATGTAGATATTACAACAGAGG 7468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAAT 7409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGACGAAGT 7285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCAATAATGAATATTGTAATAAACAAAGTAAAACAATCATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGTAAAAGATAAATCGGAATTGAGAGCGAAGCAAAAGGATTAA 7813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCTATTAGGAAAAAATATTGATGTTA 7768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTTAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   длаталласадаталлалалатадалаталлалалалаласаладаласалтаталаттал 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u> АДАДАДАДАДАДАДАДАДАДАДАДАСТТДА БАДАДАДАДАДАДАДАДАДАДАДАДАДАДАДА</u>
                       (673)
                                                                          max
                                                                                                                                                                                                                                          Associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              446
                                                                                                                                                                                                                                              With
```

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; FEATURE:
; OTHER INFORMATION: Clone ID: PAT_MRT3847_23282C.1
US-10-424-599-57885
S
                                  밁
                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-425-115-120013/c
                                                                                                                                                                       ; OTHER INFORMATION: Clone ID: MRT4577_40935C.1 US-10-425-115-120013
                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: Nucleic Acid Molecule:
TITLE OF INVENTION: Plants
FILE REFERENCE: 38-21 (53222) B
CURRENT APPLICATION NUMBER: US/10/425,115
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 369326
SEQ ID NO 120013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.6%;
Best Local Similarity 47.9%;
Matches 179; Conservation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 120013, Application US/10425115
Publication No. US20040214272A1
GENERAL INFORMATION:
APPLICANT: La Rosa, Thomas J.
APPLICANT: Kovalic, David K.
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei
                                                                                                                      Query Match 0.6%; Score 62.4; D
Best Local Similarity 45.4%; Pred. No. 1.1;
                                                                                                                                                                                                                       NAME/KEY: unsure
LOCATION: (1)..(1062)
OTHER INFORMATION: unsure at all n locations
                                                                                                                                                                                                           FEATURE:
                                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                                            TYPE: DNA
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                LENGTH: 1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7110 AGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAATATTAAGCAAACAGCAGCAAATGC 7169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7410
 9288 TGTGAATGTTCATGGGGTGGCTGAAGCAAGAGGTGCAGGAGCCAAAGCGACAGTTAGTGT 9347
                                   AAAATAAAAAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAGAATAATATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGGA 7469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAAT 7409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAACAAAGAACAAGATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGAATCGGAGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    АДАДАТАДАДАТАДАДАДАДАДАДАДАДАТАДАТИЛАДАДАТАДАТАДАДАТАДАДАДА
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAAGATAGAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGT 7289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                      0; Mismatches 271;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 62.6; DB 7;
Pred. No. 0.82;
0; Mismatches 195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Molecules
                                                                                                                                                                                                                                                                                                                                                                                                                                                      and Other Molecules Associated
                                                                                                                                        DB
                                                                                                                                      Length 1062;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     547
                                                                                                                                                                                                                                                                                                                                                                                                                                                          With
```

```
В
                                                                            ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                 Ş
                                                                                                                밁
                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 39
US-10-425-115-172717/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 β
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                    US-10-425-115-172717
                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Nucleic Acid Molecules
TITLE OF INVENTION: Plants
FILE REFERENCE: 38-21(5322)B
CURRENT APPLICATION NUMBER: US/10/425,115
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 369326
SEQ ID NO 172717
LENGTH: 1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 172717, Application US/10425115 Publication No. US20040214272A1 GENERAL INFORMATION:
                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                 Matches 177;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: La Rosa, Thomas J.
APPLICANT: Kovallc, David K.
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei
                                                                                                                                                                                                                                                                                                                                                                                    TYPE: D
                                                                                                                                                                                                                                                                                               FEATURE:
NAME/KEY: unsure
LOCATION: (1)..(1243)
OTHER INFORMATION: unsure at all n locations
                                                                                                                                                                                                                                                              FEATURE: OTHER INFORMATION: Clone ID: MRT4577_89100C.1
                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9468
                                                                                                                                               7110 AGAAAAAGTAAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGC
                                                                                                                                                                                                                                                                                                                                                                                    DNA
AGAAGATAGAAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGACGAAGT 7289
                                                                                AGGAATCGGAGGAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTGGAACAGCTGT
                                                                                                                  AAAAAAAAAAAAAAA 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAAAAGGGAAAAAA 9723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATGAAGTAAAATTTAATAATGCGATCCGAGAATTTAAAAATAATCTGGCAAGATTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCTATTGCGGATGCCAAAAGTCATGCTGCAGCTGCTTCGGCAACTGCCACTATTGAAAA 952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAGAATCAAATAAATAGAACTAATAATGTTGATTTAGCAGGAAAAATTAAAACAGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGGAAAGCTAATAAAAAAACGTCGGTAGGATCTAATCAGGTAGACTGGTATACGGATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                               0.6%;
                                                                                                                                                                                                 Score 62.4;
Pred. No. 1.
                                                                                                                                                                              Pred. No. 1.2;
0; Mismatches 194; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and Other Molecules Associated
                                                                                                                                                                                                              DB 8;
                                                                                                                                                                                                              Length 1243;
                                                                                                                                                                                0
                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  810
                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILE REFERENCE: UF-221C1XCZ1

CURRENT APPLICATION NUMBER: US/10/706,635

CURRENT FILING DATE: 2003-11-12

PRIOR APPLICATION NUMBER: 09/086,651

PRIOR APPLICATION NUMBER: 09/662,254

PRIOR APPLICATION NUMBER: 09/662,254

PRIOR APPLICATION NUMBER: 09/662,254

PRIOR APPLICATION NUMBER: 60/224,479

PRIOR APPLICATION NUMBER: 60/224,479

PRIOR FILING DATE: 2000-09-10

NUMBER OF SEQ ID NOS: 80

SOPTWARE: Patentin version 3.1

SEQ ID NO 24
                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                          S
                                                                                밁
                                                                                                             Ś
                                                                                                                                                 밁
                                                                                                                                                                                                              В
                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; LENGTH: 50000
; TYPE: DNA
; ORGANISM: Ameacta moorei entomopoxvirus
US-10-706-635-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 40
US-10-706-635-24/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Moyer, R
APPLICANT: Li, Yi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 24, Application US/10706635 Publication No. US20050014263A1
                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 469;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: Materials and Methods for Delivery and Expression of Heterologous
                                                                                                                                                                                                                                                                                                                                                                                                                             Match 0.6%;
Local Similarity 43.8%;
                                                                                                                                                                                                                40057
                                                                                                                                                 39997
                                                                                                                                                                                                                                                                                 40117 GAATGCGAAATGTGTAAAAATTACTATATAACAAAATTTAATACTATTATTTCCGAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7470 CAAGAATAATA 7480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7410 TAAAGCCATTGTGAAGACTTCTGATATTATTGGAAAAAATGTAGATATTACAACAGAGGA 7469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7350 TATTTCTACAGAAGATACTTCTGTAAAAGCGGATAGAGGAGATACTCAGGGAGAAGGAAT 740%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7290 TAACAAAGAACAAGATAAAAAGTAAATGATGCTACGAAAAAATCTTACAATCAGCAGG 7349
                                                                                                                                                                                                                                                 727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70
                                                                                                                                                                                                                                                                                                                                                                                 10 ATCAAAAATAACGTTCAGAGGACAAGGAAGAGGATATCAGATTCTAAAAAAAGTTTTAATG
                                                                                                                                                                                                                                                                                                                ATTITIGGGATIGITGATTAACACTATGACGGTGAGGGCTAATGATACAATCACCGCGACT 129
                  GCAAATCTATATTTTGGGGAAAAGAATAGTACGGGGGTAAATAATCTTTTTAACTTTGTC 309
                                                                                                                                                                                                                AAAAAATATATTATTAAATATTATATGTGATAAATGTTCTCATACTACTGCATATAAT 3998
                                                                                                                                                                                                                                                                                                                                                  ATGGAATATTATGATTATAAATATATATACAAAATTAAATTTTATTATATATTTAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ТААЗАЗАЛАЛААĀAAAAAAGTAAAATAAAAAAAAAATTAAAAATTAAAAGAAACAAG 728
                                                                                                                                                 ÁTTAATGTCCCAÁTAGATTATATGAAAAATÁAAAAATTACCCCATTA-CATCTÁTTAAA 39939
                                                                                                                                                                              ATTCAAGGGGAGAACGCTTTTAACAGTTTTAATAGATTTGCTTTAACAGAAAATAATATA 249
                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Richard
                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches 586; Indels 15;
                                                                                                                                                                                                                                                                                                                                                                                                                             Score 62.4; DE Pred. No. 5.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 50000
                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                  39879
                                                                                                                                                                                                                                                                                                                                                                                   69
                                                                                                                                                                                                                                                                                 4005
                                                                                                                                                                                                                                                                                                                                                  40118
```

멍 δ 밁 S & S

밁 5

δ

```
39758 AAATTCAATATCAAAACATATTATAAAAACAGTATTAAATGTAAAAAATATGTTTTTTGA 39699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    39818 TAATAAATATAGACATAATTCAGACAATAATTTATTAAAATATTTÄÄÄTÄÄTÄTTGATÄA 39759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39698 AAAATAAAATAAGATAATAATAGTTAAAATGTCTTCTATAATATATGATGAAAAAAATAAA 39639
                                                                                                                                                                                                                                                                                                              39338
                                                                                                                                                                                                                                                                                                                                                                                                                  39398 ТСТАСАТССТАТТТАТТАААТСАТТТАТТАGATTGGATAAATATTAAAATAATAATAA 39339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             39518 ТАЙГАЛАЛЛАЛСТАТАЛАЛТТАЙГАЛАЛТАТТАТАТСЛАТТАТТАЛАТАЛАТАЛАЛАЙТАЛ 39459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1016 TCATAGGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGAT 1065
                                                                                                                                                                                                                                                           896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                483 AGAAGCCAAACATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAAAT 542
                                                                                                                                                                                                                                                                                                                                               837 AGGAAATACCAAAGCAAATATTGAATCTG-ATGCTGTATTGGAAGCAGATGGAAATATAA 895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     363 TGGAGGAAATTTATATTTCTTAAGCTCGGAAGGGATGGCAGTAGGAAAAAATGGAGTTAT 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          723 AAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGAT-----TC 776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    423 CAATGCTGGTTCTTTCATTCTATTATTCCAAAACAAGATGATTTTAAGAAGGCTTTGGA 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCATTGAATCCGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGCAT
                                                                                                    TCCTCAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAA 836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGATTTTAAAAATTTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGATTT 722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGGTTTATATGCGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATTAC 662
                                                                                                                                                    602
```

Search completed: November 26, 2005, 06:34:14 Job time : 4553 secs

á 밁 Ş 皮

Ş 밁 중 유 ð 밁 ঠ 밁 δ 밁

THIS PAGE BLANK (USPTO)

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                             Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
שים עם
                                                                                        Published Applications NA_New:*

1: /cgn2_6/ptodata/2/pubpna/US10 NEW_PUB.seq:*

2: /cgn2_6/ptodata/2/pubpna/US07_NEW_PUB.seq:*

3: /cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*

4: /cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*

5: /cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*

6: /cgn2_6/ptodata/2/pubpna/US01_NEW_PUB.seq:*

7: /cgn2_6/ptodata/2/pubpna/US11_NEW_PUB.seq:*

9: /cgn2_6/ptodata/2/pubpna/US11_NEW_PUB.seq:*

9: /cgn2_6/ptodata/2/pubpna/US11_NEW_PUB.seq3:*

10: /cgn2_6/ptodata/2/pubpna/US10_NEW_PUB.seq3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           November 25, 2005, 20:31:24; Search time 307 Seconds (without alignments) 4708.018 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3205263 segs, 74304013 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 atgagcggcatcaaaaataa.....gagaaaaaagggaaaaaatga 9726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-647-057-8
9726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6410526
```

and i	Bcore	Pred.
g de	grea	No.
rive	ter	18
Ьy	thar	her
anal	or Or	E
ysis	equa	rof
of f	1 to	res
the	the	ults
total	BCOT	pred
8001	of	icted
e di	the	yd
stribut	result	chance
ion.	bein	to
	id bi	lave
and is derived by analysis of the total score distribution.	rinted,	מ

SUMMARIES

٠.

Result No.

იი

ი

1 US-10-485-517-43 Sequence 43, April 1 US-10-485-517-42 Sequence 42, April 1 US-10-485-517-121 Sequence 21, April 1 US-10-485-517-121 Sequence 57, April 1 US-10-485-517-12 Sequence 57, April 1 US-10-485-517-12 Sequence 57, April 1 US-10-793-626-4149 Sequence 4149, Sequence 3187, April 1 US-10-793-626-3187 Sequence 11, April 1 US-10-793-626-3637 Sequence 11, April 1 US-10-793-626-371 Sequence 11, April 1 US-10-793-626-375 Sequence 3712, Sequence 3712, US-10-793-626-375 Sequence 3729, US-10-793-626-375 Sequence 3756, US-10-793-626-376 Sequence 3758, US-10-793-626-378 Sequence 3758, US-10-793-626-378 Sequence 3758, US-10-793-626-378 Sequence 3968, US-10-793-626-378 Sequence 3968, Sequence 3432,	0.8 4965 1 US-10-485-517-43 Sequence 43, App. 0.6 2407 1 US-10-485-517-42 Sequence 42, App. 0.5 3543 1 US-10-93-626-3493 Sequence 3493, App. 0.5 2189 1 US-10-485-517-121 Sequence 121, App.	0 / 1 / 0 / 0 / 0 / 0 / 0 / 0 / 0 / 0 /	March		DB 7111111111111111111111111111111111111	US-10-485-517-43 US-10-485-517-42 US-10-485-517-12 US-10-485-517-12 US-10-485-517-12 US-10-485-517-12 US-10-793-626-4149 US-10-793-626-3187 US-10-793-626-3637 US-10-793-626-3712 US-10-793-626-3712 US-10-793-626-3715 US-10-793-626-3716 US-10-793-626-3716 US-10-793-626-3717 US-10-793-626-3716 US-10-793-626-3716	On 43, A 42, A 42, A 121, A 121, A 121, A 121, A 131, A 13
.2 0.5 2189 1 US-10-485-517-121 sequence 121,	.2 0.5 2189 1 US-10-485-517-121 Sequence 121,	50.2	0.5	2189 3174	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	US-10-485-517-121 US-10-485-517-57	57, 1
1 US-10-485-517-12 Sequence 12,	.2 · 0.5 3174 1 US-10-485-517-57 Sequence 57, J	48.4	0.5	3327	۲	US-10-485-517-12	12,
0.5 3543 1 US-10-793-626-4149 Sequence 4149, Ap	.2 · 0.5 3174 1 US-10-485-517-57 Sequence 57, J	47.8	0.5	3543	ш	US-10-793-626-4149	4149,
0.5 3840 1 US-10-793-626-3187 Sequence 3187, Ap	.2 0.5 3174 1 US-10-485-517-57 Sequence 57, Appl 0.5 3327 1 US-10-485-517-12 Sequence 12, Appl 0.5 3543 1 US-10-793-626-4149 Sequence 4149, Ap	47.8	0.5	3840	μ	US-10-793-626-3187	3187,
7 US-11-074-176-131 Sequence 131, App	.2 · 0.5 3174 l US-10-485-517-57 Sequence 57, Appl 4	45.6	0.5	1293	7	US-11-074-176-131	131,
1 US-10-485-517-11 Sequence 11,	.2 · 0.5 3174 1 US-10-485-517-57 Sequence 57, Appl .4 0.5 3327 1 US-10-485-517-12 Sequence 12, Appl .8 0.5 3543 1 US-10-793-626-4149 Sequence 4149, Ap .8 0.5 3840 1 US-10-793-626-3187 Sequence 3187, Ap .6 0.5 1293 7 US-11-074-176-131 Sequence 131, App	45.6	0.5	2275	ب	US-10-485-517-11	11,
1 US-10-793-626-3637 Sequence 3637, Ap	.2 0.5 3174 1 US-10-485-517-57 Sequence 57, Appl 4 0.5 3327 1 US-10-485-517-12 Sequence 12, Appl 8 0.5 3543 1 US-10-793-626-4149 Sequence 4149, Appl 9 0.5 3840 1 US-10-793-626-3187 Sequence 3187, Appl 9 0.5 1293 7 US-11-074-176-131 Sequence 111, Appl 9 0.5 2275 1 US-10-485-517-11 Sequence 11, Appl	45.6	0.5	3309		US-10-793-626-3637	363
1 US-10-793-626-1821 Sequence 1821, Ap	.2 0.5 3174 l US-10-485-517-57 Sequence 57, Appl 1.4 0.5 3327 l US-10-485-517-12 Sequence 12, Appl 1.8 0.5 3543 l US-10-793-626-4149 Sequence 1249, Appl 1.8 0.5 3840 l US-10-793-626-3187 Sequence 3187, Appl 1.8 0.5 1293 7 US-11-074-176-131 Sequence 131, Appl 1.6 0.5 2275 l US-10-485-517-11 Sequence 11, Appl 1.6 0.5 3309 l US-10-793-626-3637 Sequence 3637, Appl 1.6 0.5 3309 l US-10-485-517-11 Sequence 3637, Appl 1.6 0.5 0.5 0.5 0.5 0	45.4	0.5	663	_	US-10-793-626-1821	1821,
1 US-10-793-626-3712 Sequence 3712,	.2 0.5 3174 1 US-10-485-517-57 Sequence 57, Appl 4 0.5 3327 1 US-10-85-517-12 Sequence 12, Appl 8 0.5 3543 1 US-10-793-626-4149 Sequence 4149, Appl 8 0.5 3840 1 US-10-793-626-3187 Sequence 3187, Appl 9 0.5 1293 7 US-11-074-176-131 Sequence 131, Appl 14 0.5 2275 1 US-10-485-517-11 Sequence 11, Appl 15 0.5 3309 1 US-10-793-626-1821 Sequence 1321, Appl 16 0.5 3631 1 US-10-793-626-1821 Sequence 1821, Appl 17 0.5 663 1 US-10-793-626-1821 Sequence 1821, Appl 18 0.5 663 1 US-10-793-626-1821 Sequence 1821 Seq	45.4	0.5	3180	μ.	US-10-793-626-3712	3712,
1 US-10-793-626-3756 Sequence 3756,	.2 0.5 3174 1 US-10-485-517-12 Sequence 57, 4 0.5 3327 1 US-10-485-517-12 Sequence 12, 8 0.5 3543 1 US-10-793-626-4149 Sequence 414, 8 0.5 3840 1 US-10-793-626-3187 Sequence 318, 6 0.5 1293 7 US-11-074-176-131 Sequence 131, 6 0.5 2275 1 US-10-485-517-11 Sequence 11, 6 0.5 3309 1 US-10-793-626-3637 Sequence 36, 6 0.5 363 1 US-10-793-626-3637 Sequence 382, 4 0.5 3100 1 US-10-793-626-3712 Sequence 371,	45.4	0.5	3650	μ	US-10-793-626-3756	3756,
1 US-10-793-626-2229 Sequence 2229,	2 0.5 3174 1 US-10-485-517-57 Sequence 57, Appl 4 0.5 3327 1 US-10-485-517-12 Sequence 12, Appl 8 0.5 3327 1 US-10-793-626-4149 Sequence 12, Appl 9 0.5 3543 1 US-10-793-626-3187 Sequence 3187, Appl 1 US-10-793-626-3187 Sequence 3187, Appl 9 0.5 3189 7 US-11-074-176-131 Sequence 131, Appl 1 US-10-793-626-3637 Sequence 131, Appl 1 US-10-793-626-3637 Sequence 3637, Appl 1 US-10-793-626-3712 Sequence 1821, Appl 1 US-10-793-626-3712 Sequence 3712, Appl 1 US-10-793-626-3712 Sequence 3712, Appl 1 US-10-793-626-3756 Sequence 3712, Appl 1 US-10-793-626-3756 Sequence 3756, Appl 1 US-10-793-626-3756 Sequence 3756 Sequen	45.2	0.5	570	_	US-10-793-626-2229	2229,
1 US-10-793-626-3777 Sequence 3777,	2 0.5 3174 1 US-10-485-517-57 Sequence 57, Appl 4 0.5 3327 1 US-10-485-517-12 Sequence 12, Appl 8 0.5 3543 1 US-10-793-626-4149 Sequence 4149, Appl 8 0.5 3840 1 US-10-793-626-3187 Sequence 3187, Ap 8 0.5 1293 7 US-11-074-176-131 Sequence 131, Appl 9 0.5 2275 1 US-10-793-626-3637 Sequence 11, Appl 9 0.5 3309 1 US-10-793-626-3637 Sequence 11, Appl 9 0.5 3309 1 US-10-793-626-3712 Sequence 3637, Ap 9 0.5 3180 1 US-10-793-626-3712 Sequence 3756, Ap 9 0.5 3650 1 US-10-793-626-376 Sequence 3756, Ap 9 0.5 3650 1 US-10-793-626-376 Sequence 3756, Ap 9 0.5 570 1 US-10-793-626-2229 Sequence 2229, Ap	45.2	0.5	2858	۳	US-10-793-626-3777	3777,
1 US-10-793-626-3968 Sequence 3968,	2 0.5 3174 1 US-10-485-517-57 Sequence 57, Appl 4 0.5 3327 1 US-10-485-517-12 Sequence 12, Appl 8 0.5 3324 1 US-10-793-626-4149 Sequence 112, Appl 8 0.5 3840 1 US-10-793-626-3187 Sequence 3187, Appl 9 0.5 3129 7 US-11-074-176-131 Sequence 3187, Appl 19 0.5 3297 1 US-10-485-517-11 Sequence 111, Appl 19 0.5 3297 1 US-10-793-626-3637 Sequence 121, Appl 19 0.5 3309 1 US-10-793-626-3637 Sequence 372, Appl 19 0.5 3180 1 US-10-793-626-3712 Sequence 3712, Appl 19 0.5 3180 1 US-10-793-626-3712 Sequence 372, Appl 19 0.5 3180 1 US-10-793-626-3712 Sequence 3726, Appl 19 0.5 3650 1 US-10-793-626-3729 Sequence 3727, Appl 19 0.5 3650 1 US-10-793-626-3727 Sequence 37377, Appl 19 0.5 3650 1 US-10-793-626-3737	45.2	0.5	3002	μ	US-10-793-626-3968	3968,
1 US-10-793-626-3432 Sequence 3432,	2 0.5 3174 1 US-10-485-517-57 Sequence 57, 4 0.5 3327 1 US-10-485-517-57 Sequence 12, 8 0.5 3543 1 US-10-793-626-4149 Sequence 414; 8 0.5 3840 1 US-10-793-626-3187 Sequence 318, 6 0.5 1293 7 US-11-794-176-131 Sequence 318, 6 0.5 2275 1 US-10-485-517-11 Sequence 11, 6 0.5 3309 1 US-10-793-626-3637 Sequence 363, 6 0.5 3309 1 US-10-793-626-3751 Sequence 376, 6 0.5 3180 1 US-10-793-626-3751 Sequence 377, 9 0.5 3180 1 US-10-793-626-3751 Sequence 377, 14 0.5 3180 1 US-10-793-626-3751 Sequence 377, 15 2858 1 US-10-793-626-3759 Sequence 377, 17 20 0.5 3850 1 US-10-793-626-3759 Sequence 377, 18 20 0.5 3850 1 US-10-793-626-3759 Sequence 377, 18 20 0.5 3850 1 US-10-793-626-3759 Sequence 377, 18 20 0.5 3850 1 US-10-793-626-3968 Sequence 377, 20 0.5 3002 1 US-10-793-626-3968 Sequence 377, 21 0.5 3002 1 US-10-793-626-3968 Sequence 377, 22 0.5 3002 1 US-10-793-626-3968 Sequence 377, 23 0.5 3002 1 US-10-793-626-3968 Sequence 377, 23 0.5 3002 1 US-10-793-626-3968 Sequence 377, 24 0.5 3002 1 US-10-793-626-3968 Sequence 377, 30 0.5 3002 1 US-10-793-626-3968 Sequence 377, 31 0.5 3002 1 US-10-793-626-3968 Sequence 377, 31 0.5 3002 1 US-10-793-626-3968 Sequence 377, 31 0.5 3002 1 US-10-793-626-3968 Sequence 377, 32 0.5 3002 1 US-10-793-626-3968 Sequence 377, 33 0.5 3002 1 US-10-793-626-3968 Sequence 377, 34 0.5 3002 1 US-10-793-626-3968 Sequence 377, 35 0.5 3002 1 US-10-793-626-3968 Sequence 377, 35 0.5 3002 1 US-10-793-626-3968 Sequence 377, 35 0.5 3002 1 US-10-793-626-3968 Sequence 377,	45.2	0.5	3063	۳	US-10-793-626-3432	3432,
1 US-10-793-626-3676 Sequence 3676,	2 0.5 3174 1 US-10-485-517-57 Sequence 57, 4 0.5 3327 1 US-10-485-517-12 Sequence 12, 5 327 1 US-10-485-517-12 Sequence 12, 6 0.5 3543 1 US-10-793-626-3187 Sequence 318, 8 0.5 3840 1 US-10-793-626-3187 Sequence 318, 6 0.5 1293 7 US-11-074-176-131 Sequence 11, 6 0.5 2275 1 US-10-793-626-3637 Sequence 11, 6 0.5 3309 1 US-10-793-626-3637 Sequence 363 1 US-10-793-626-1821 Sequence 363 1 US-10-793-626-3752 Sequence 375, 4 0.5 3650 1 US-10-793-626-3752 Sequence 375, 4 0.5 3650 1 US-10-793-626-3753 Sequence 375, 2 0.5 3650 1 US-10-793-626-3756 Sequence 272, 2 0.5 3063 1 US-10-793-626-3968 Sequence 396, 3 0.5 3063 1 US-10-793-626-3968 Sequence 396, 3 0.5 3063 1 US-10-793-626-3432 Sequence 343, 3 0.5 3063 1 US-1	45.2	0.5	3295	ш	Ł	3676,
1 US-10-793-626-4138 Sequence 4138,	2 0.5 3174 1 US-10-485-517-12 Sequence 57, 4 0.5 3327 1 US-10-793-626-1149 Sequence 414, 8 0.5 3543 1 US-10-793-626-3187 Sequence 414, 8 0.5 3840 1 US-10-793-626-3187 Sequence 314, 8 0.5 3140 1 US-10-793-626-3187 Sequence 131, 8 0.5 1293 7 US-11-074-176-131 Sequence 131, 8 0.5 2275 1 US-10-485-517-11 Sequence 11, 9 0.5 3109 1 US-10-793-626-3637 Sequence 367, 10 0.5 3109 1 US-10-793-626-3712 Sequence 371, 10 0.5 3100 1 US-10-793-626-372 Sequence 371, 11 0.5 3650 1 US-10-793-626-372 Sequence 272, 12 0.5 3063 1 US-10-793-626-379 Sequence 377, 13 0.5 3063 1 US-10-793-626-377 Sequence 377, 14 0.5 3650 1 US-10-793-626-377 Sequence 377, 15 3002 1 US-10-793-626-377 Sequence 377, 16 0.5 3002 1 US-10-793-626-343 Sequence 377, 17 0.5 3002 1 US-10-793-626-343 Sequence 343, 18 0.5 3002 1 US-10-793-626-345 Sequence 343, 18 0.5 3002 1 US-10-793-626-3676 Sequence 343, 18 0.5 3002 1 US-10-793-626-3676 Sequence 343, 18 0.5 3002 1 US-10-793-626-3676 Sequence 343,	45.2	0.5	3379	_	US-10-793-626-4138	4138,
1 US-10-793-626-4114 Sequence 4114,	2 0.5 3174 1 US-10-485-517-57 Sequence 57, 4 0.5 3327 1 US-10-793-626-4149 Sequence 414; 8 0.5 3543 1 US-10-793-626-3187 Sequence 318; 8 0.5 3840 1 US-10-793-626-3187 Sequence 318; 6 0.5 1293 7 US-11-793-626-3187 Sequence 318; 6 0.5 2275 1 US-10-485-517-11 Sequence 11, 6 0.5 3309 1 US-10-793-626-3637 Sequence 363; 6 0.5 3309 1 US-10-793-626-3821 Sequence 363; 6 0.5 3180 1 US-10-793-626-3756 Sequence 375; 7 0.5 3180 1 US-10-793-626-3756 Sequence 375; 8 0.5 3650 1 US-10-793-626-3756 Sequence 377; 9 0.5 2858 1 US-10-793-626-3968 Sequence 396; 9 0.5 3063 1 US-10-793-626-3432 Sequence 396; 9 0.5 3295 1 US-10-793-626-3432 Sequence 367; 9 0.5 3295 1 US-10-793-626-3432 Sequence 367; 9 0.5 3379 1 US-10-793-626-4138 Sequence 413;	45.2	0.5	3518	_	US-10-793-626-4114	4114,
	2 0.5 3174 1 US-10-485-517-57 Sequence 57, 4 0.5 3327 1 US-10-485-517-12 Sequence 12, 8 0.5 3327 1 US-10-793-626-4149 Sequence 414; 8 0.5 3840 1 US-10-793-626-3187 Sequence 318, 6 0.5 1293 7 US-11-793-626-3187 Sequence 318, 6 0.5 1293 7 US-11-793-626-3637 Sequence 11, 6 0.5 3309 1 US-10-793-626-3637 Sequence 11, 6 0.5 3309 1 US-10-793-626-3637 Sequence 363 1 US-10-793-626-3751 Sequence 375, 4 0.5 3630 1 US-10-793-626-3751 Sequence 375, 4 0.5 3650 1 US-10-793-626-3751 Sequence 375, 6 0.5 3090 1 US-10-793-626-3751 Sequence 375, 7 0.5 3650 1 US-10-793-626-3229 Sequence 375, 7 0.5 3063 1 US-10-793-626-3968 Sequence 396, 7 0.5 3063 1 US-10-793-626-3432 Sequence 396, 7 0.5 3063 1 US-10-793-626-3432 Sequence 343, 7 0.5 3295 1 US-10-793-626-3432 Sequence 343, 7 0.5 3399 1 US-10-793-626-4134 Sequence 411.	45.2	0.5	3841	بر	US-10-793-626-3497	Sequence 3497, Ap
1 US-10-793-626-3497 Sequence 3497,	2 0.5 3174 1 US-10-485-517-57 Sequence 57, 4 0.5 3327 1 US-10-485-517-12 Sequence 12, 8 0.5 3324 1 US-10-793-626-4149 Sequence 414; 8 0.5 3840 1 US-10-793-626-3187 Sequence 318, 6 0.5 3293 7 US-11-074-176-131 Sequence 131, 6 0.5 3295 1 US-10-485-517-11 Sequence 131, 6 0.5 3295 1 US-10-793-626-3637 Sequence 11, 6 0.5 3309 1 US-10-793-626-3637 Sequence 11, 6 0.5 3409 1 US-10-793-626-3712 Sequence 371, 6 0.5 360 1 US-10-793-626-372 Sequence 371, 7 0.5 3650 1 US-10-793-626-372 Sequence 371, 7 0.5 3650 1 US-10-793-626-372 Sequence 371, 7 0.5 3650 1 US-10-793-626-372 Sequence 371, 7 0.5 3002 1 US-10-793-626-377 Sequence 371, 7 0.5 3002 1 US-10-793-626-3968 Sequence 371, 7 0.5 3002 1 US-10-793-626-367 Sequence 343, 2 0.5 3295 1 US-10-793-626-3418 Sequence 367, 3 0.5 3518 1 US-10-793-626-4118 Sequence 341, 2 0.5 3541 1 US-10-793-626-413 Sequence 341, 2 0.5 3841 1 US-10-793-626-3497 Sequence 349	ה ט	o n	2905	_	US-10-793-626-3856	Sequence 3856, Ap

0000

იიი

25 45 0.5 2119 1 US-10-485-517-13 26 45 0.5 2621 1 US-10-793-626-4448 27 45 0.5 2621 1 US-10-793-626-4448 27 45 0.5 3589 1 US-10-793-626-4353 28 44.8 0.5 1206 1 US-10-793-626-4188 30 44.8 0.5 3354 1 US-10-793-626-4188 31 44.6 0.5 3497 1 US-10-793-626-3849 32 44.6 0.5 3170 1 US-10-793-626-3849 33 44.6 0.5 3170 1 US-10-793-626-2051 34 44.4 0.5 3145 1 US-10-793-626-4195 36 44.4 0.5 3145 1 US-10-793-626-4195 37 44.4 0.5 3335 1 US-10-793-626-4195 38 44.4 0.5 3335 1 US-10-793-626-4066 39 44.2 0.5 2454 1 US-10-793-626-4066 40 44.2 0.5 2454 1 US-10-793-626-1267 41 44 0.5 1044 1 US-10-793-626-1267 43 44 0.5 3163 1 US-10-793-626-1267 44 0.5 3163 1 US-10-793-626-1267 45 46 0.5 3163 1 US-10-793-626-1267 46 0.5 3163 1 US-10-793-626-1267 47 0.5 3163 1 US-10-793-626-1267 48 0.5 3163 1 US-10-793-626-1267 49 0.5 3163 1 US-10-793-626-1364			O					a	C	o	ი	a				n				Ω		
0.5 2119 0.5 35821 0.5 35821 0.5 35821 0.5 3354 0.5 3354 0.5 3354 0.5 3170 0.5 4529 0.5 3370 0.5 3328 0.5 33328 1 0.5 33328 1 0.5 2454 1 0.5 1044 1 0.5 3267 1 0.5 3267 1 0.5 3267 1 0.5 3267 1 0.5 3267	4 5	44	43	42	41	40	39	38	37	36	ω 5	34	ω ω	32	31	30	29	28	27	26	25	
2011 2011 35821 1206 112	44	44	44	44	44	44.2	44.2	44.4	44.4	44.4	44.4	44.4	44.6	44.6	44.6	44.8	44.8	44.8	45	45	45	
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
1 US-10-485-517-13 1 US-10-793-626-4448 1 US-10-793-626-3353 1 US-10-793-626-4188 1 US-10-793-626-4188 1 US-10-793-626-4188 1 US-10-793-626-3849 1 US-10-793-626-3849 1 US-10-793-626-4198 1 US-10-793-626-4198 1 US-10-793-626-4195 1 US-10-793-626-4195 1 US-10-793-626-4195 1 US-10-793-626-4196 1 US-10-793-626-4197 1 US-10-793-626-3042	3618	3267	3153	1044	1044	2454	2454	3771	3335	3328	3145	1500	4329	3170	3066	3497	3354	1206	3589	2621	2119	
US-10-485-517-13 US-10-793-626-4448 US-10-793-626-448 US-10-793-626-835 US-10-793-626-4188 US-10-793-626-3819 US-10-793-626-3849 US-10-793-626-3849 US-10-793-626-2051 US-10-793-626-4198 US-10-793-626-4348 US-10-793-626-4348 US-10-793-626-4348 US-10-793-626-4348	ب	_	1	س	μ	۲	Н	ب	ب	ب	μ	-	μ	۲	_	_	۳	<u>س</u>	۲	_	_	1
	US-10-793-626-3564	US-10-793-626-4042	US-10-793-626-3348	US-10-793-626-1267	US-10-793-626-461	US-10-793-626-1527	US-10-793-626-49	US-10-793-626-4066	US-10-793-626-3503	US-10-793-626-4195	US-10-793-626-4198	US-10-793-626-1557	US-10-793-626-2051	US-10-793-626-3849	US-10-793-626-3818	US-10-793-626-4025	US-10-793-626-4188	US-10-793-626-835	US-10-793-626-3353	US-10-793-626-4448	US-10-485-517-13	
	3564, Ap	4042, Ap	3348, Ap		461, App		49, App1	4066, Ap	3503, Ap	4195, Ap	4198, Ap	1557, Ap	2051, Ap	3849, Ap	3818, Ap	4025, Ap	4188, Ap	835, App	3353, Ap	4448, Ap	13, App1	

ALIGNMENTS

	C **																						
Query Match 0.8%; Score 79.2; DB 1;	; OKGANISM: Scaphylococcus auteus US-10-485-517-43	; LENGTH: 4965	; SEQ ID NO 43	; SOFTWARE: PatentIn version 3.1	, NUMBER OF SEQ ID NOS: 424	; PRIOR FILING DATE: 2002-01-09	; PRIOR APPLICATION NUMBER: GB 0200349.9	; PRIOR FILING DATE: 2001-08-02	FRIOR APPLICATION NUMBER: GB 0118825.9	; CURRENT FILING DATE: 2004-02-02	; CURRENT APPLICATION NUMBER: US/10/485,517	; FILE REFERENCE: P100629WO	; TITLE OF INVENTION: Antigenic Polypeptides	; APPLICANT: Mond, James	; APPLICANT: Foster, Simon	; APPLICANT: Biosynexus Incorporated	APPLICANT: University of Sheffield	GENERAL INFORMATION:	; Publication No. US20050256299Al	; Sequence 43, Application US/10485517	US-10-485-517-43/c	RESULT 1	
.2.											17		des										
DB 1;																							

S S	90	ş	ᇝ	δ	망	ð	ם	δ		
٧	ъ	Υ	ъ.	٧	מ	۲	ס	۲	Matc)	Quer
4022	4215	3962	4275	3902	4335	3842	4395	3782	hes 998	Query Match
4022 AAAAAATGGATGTTGATGTCACTGCTTATCAAGCGGACACCCAAGTGACAGGAGCTTTAA 4081	4215 ATGAAGCTAAAGCAAATGCAGAAGCAGCGATTAATGCGGTAACACCAAAAGTTGTGAAGA 4156	3962 TGAACAATGAAGTTTCTGCAAAATCAGAAAATAATACAGTAGCAGGAGAATCTGAAAGCC 4021	ATACTGAAAATGGTAAAGCAAATCAAGCCATTTCAGCAGCAACTACTAACGCACAAGTTG 4216	3902 AAGAAAGTGGAGGACAAGGAAAAAGTTATCTATTGGGAACTTCTGCTTCTATCAACTTAG 3961	AAACA	3842 AAGTAAATGCTTTGAGTGGAAGGAACTCAAGTAGCAGGAGGAGGAGGTTTGGAAGCAGTTA 3901	TTAATAAAAAAGCAACTGCACGTAATGAAATCACAGCAATTTTAAATAACAAATTGCAAG 4336	3782 TTCAAAGTAAAACAAGTGCTTTGGTTAAAAATAGTGATATTCGAAATGCCAATAAATTTA 3841	Matches 998; Conservative 0; Mismatches 1378; Indels 42; Gaps	0.8%; Score 79.2; DB 1; Length 4965;
081	156	021	216	961	276	901	336	941	<u>۳.</u>	

S	Db 1	§ §	. S	B 8	Дb	& 8	ş &	8 8	ß &	? B	Q	D Q	D &	S B	Ś	8 Q	ф	8 8	₽ Q	DЬ	ধ	B 8	B \$	2 5	7
5102 GAGGAATGGTATCTGTCAATCGTGGTTCTGATGAAACGGAAGCTTTAGTTAG	ACAAGAATTAATGATGCAAAACAAGAAGTTGATACTGAATTAAATCAAGCGAAAACAA	3213 AATTAGATCAAGCTIGAGCTIGATAGAAAACACAAATAGAACAACAAATGCAATTGCATCAC 3154 5042 ATTCTCATATTACAAACGTTTCTGCTGGAAGGCGCTGCAAGTATTAAGCAGGCTGGAAATCG 5101	GAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATGTACAAGCTTTGAATG	4922 CGGTAGGAGCTGCTTTTGCGAATAATACTCTTCATAATAAAACCTCTGCTTTGATTACAG 4981	GTTTAAATAATATTAATGCAGCAACTACTACAGGTGATGTAACTACTGCTAAAGATACAG	4862 CAAATAATTCCATTCTTGGGGTGAATGTTGCGGGAACCATTGCCGGTTCTCTTTCTACGG 4921	ATGACACGATTGCAAAGGTGGATAAAGGAAGAATTTCTGCTGATTCCTTAAATGTGAACG	4742 TTGCTATCAGCAAAGATGCTTTTTCAGGAATGGGATCTGGAGACATGGCAAGACTTATCAA 4801	4682 CGAAACAIGIGAAAIGIGGAGGCAAAATCAICTACIGITTGIIGTGGACIGGCIICIGGAC 4741	ATCAAAATATTGAAAATGCACAGTCAATCGATGATGTAAACACTGCAAAAGATAATGCAA	4622 ATAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGAGATAAAATTCATG 4681	4562 CGGTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATACTGTTAAAA 4621	AGATTAGCAACAAAAGCAAAAAAGCGCTTATTGCACAAACTGCAGATG	3735 CÁGTTGCTGÁTATTCAÁGGTATTACTGCAGATÁCAÁCAÁTTAAÁGÁTGTTGCGÁ 3682 4502 AGGAACAACTAGAAAAAGCAAAGAAAAAAAAAAAGATGTTGTAATTGTAATGCTTGCT	AAGATAAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAAATGGTTATTATACGA	4382 CCAAAGATGTCAAAAGGAAGTTCTGATCTAGCAAAAGGATATCAGGCTTTACTAAATGGAA 4441	GTGCTACAACTGAAGAAAAATGCAGCAAAAAGATTTAGTTTTAAAAAGCTAAAGAAAAAA		4262 GTTCTGGAGCGGGATTAGGAAATTATCAAGGGGCTGTTTCTGTCAATAAGATTGACAATG 4321	3975 AAGACGCTGGAAAGAATTCAAATTCAAAGCACGCAACCAGCAACAGCGGTTAAATCAAATG 3916	4202 CAAAAGCTCTTTTAGCAACCACTCAAGTGACTGCTGCAGTGACGACGGGAGGGA	4142 ACAACAAAGTAAATGCTTCTATTAGTGGTGGGAGATATACTAACGTTAATCGAGCGGACG 4201	4095 ATGATCAGAACGCTACAACAGAAGAAGAAAGAAGCAGCTATTCAACAATTAGCAACAGCAG 4036		
D	₽ ₽	ફ	B &	?	8 8	Ş	8 8	ם מ	\$ B	Ş ¦	음 성	D 5	€ ₽	Qy !	B &	Db .	\$ B	Ş	B 45	\$ B	. 8	Db 4	₹ B	ş	Вb
2016 ATGCAGATGCAGATGCAT 1999	2076 AGÁÁAAÁTGCTTTGGAÁGCÁÁTCAGÁGÁGÁAGTGGTTÁÁCÁÁGCÁÁATAGAAATAÁTTÁÁAÁ 2017 6161 GTTCAGCTACTCATTACTT 6178	6101 TTAACGAAGACTTATCACAAAAAAGAAAAAAAAAATAAGTAATAAAAAAAGGATTTGTTACCAATA 6160	2013 CTACTGTCAAAAATAGTGCGCTTGAACAACTTAAAGCACACGTATTAATCCTGAAGTTA 2077	2196 AAGACATTTTATCAAAAGCAACTGAAGATATTTCTGATCAAACTACAAATGCAGAAATCG 2137	2256 GTGTAAATGTCAACGCTGATGCTACAACTGAAGAAAAAGAAGCGTTTACGAATGCTTTAG 2197 S981 GATCTACAAAAGCATATGTAAAAAGATTCTACAGTGATTGCTAAAGAAAG	5921 CAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCTCAACCAGTGTGAATGAA	S861 CGANGGGAAATGICGGAGTTATIKCAGAGICTGAIGGGIAATIGCIAATIA GCAAGAA S920	2376 CTGAAGTTGAAAAAGCGAAAGCTCAAGGACTTGAAGCATTTGATAACATTCAAATCGACT 2317	2436 CAATGATTAAACAAATTACAGATCAAGCTAAACAAGGTATTACTGATGCAAAAATCACTG 2377		5702 TACGAAATGCTTTGGTAAAAAGTGACCAGTTAACTGCTGAAAGAAA	556 AAGTAGATGCTACTGTTAAACCTAAAGCGAACCAAGCTATTG	2616 İddarahrogordan gargariğa karınanda da adalanda da adalanda da adalanda da adalanda da adalanda sanı 2557 2616 İddarahra adalanda da	5582 TGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAG 5641	5522 AAAATAATGGAAATAAGGAAAAGGCAAATGTTTAATGTTCTAGCTGAAAAATACGAGTCAAG 5581	2733 ATCAGAAGAAAATAATATTTCAGCTGACACTAATGCAACACAAGATGAAAAGCAACAAG 2674	2793 ATTACACAATTCCAACAGGTAAAAAAGAATCAGCTACAACAGATTTATATGCTTATGCAG 2734 5462 TGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATATTTGACAAAGATTTAGAGGAAG 5521	5402 CAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCT 5461	2853 AAGCTACTTCTAAAGATGACATTGAAGTTCAAATTCATAATGACTTAGATAATATTAACG 2794	2913 TIGCTGAAGCGAAAACTIGCTGAATTAAAACAAACTGCGGATCAAAATGTTAATC 2858 5342 ATCAAGATAGAAAAAATATCAATGTGACTGCAAAAAGATTATACTATGACCAATACTATAG 5401	5282 ATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAACAGTAAAATTACAACGGCGAATG 5341		3033 AAATTAATGCAGTTAAAACATTTAGTGAGTACAAAAAAAGATGCTTTAGCTAAAAAATTGAAG 2974	5162 AGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAAAGATCAAAAAAAA	3093 ATGTCGATCAATCAACAAATGAATATGTTGATAATGCAGTTAAAGAAGGAAAAGCTA 3034

```
CURRENT APPLICATION NUMBER: US/10/485,517
CURRENT FILING DATE: 2004-02-02
PRIOR APPLICATION NUMBER: GB 011825.9
PRIOR FILING DATE: 2001-08-02
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR OF SEQ ID NO. 42
PRIOR FILING DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DATE: DA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 2
US-10-485-517-42/c
                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                         S
                                                                                                                                                                                      S
                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-485-517-42
                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: University of Sheffield
APPLICANT: Biosynexus Incorporates
APPLICANT: Foster, Simon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 42, Application US/10485517 Publication No. US20050256299A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 296;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: Antigenic Polypeptides FILE REFERENCE: P100629WO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Mond, James
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5185 AATGTAGATGCAAAAGATCAAAAAAACAATAAATACAATTGCCGGAAATGCAAATGGAGGA
                                             5785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5245 AAAGCGGCTGGAGTTGGAGCAACAGTTGCTCATACAAATATTGGAAAACAATCAGTTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          514
                                                                                                                                                                                                                                                                 394
                                                                                                                                                                                                                                                                                                                                                                                                              454
                                                                                                                 334
GGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAAT 5844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAGTTCAAGCTGCCACAÁCTAAGAAATCGGATGCAAAAGCGGAAATCGCTCAAAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGACTGCAAAAGATTATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTATTGTAAAAAACAGTAAAATTACAACGGCGAATGATCAAGATAGAAAAAATATCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAACAAGCTGCATATACAGAATTAGATACTAAAAAGCAAGAAGCAAGAACAAATCTTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACGCATATAATACACGTAAACAAGAAATTCAAAATAGCAATGCTTCAACTACAGAAGAA
                                                                                                                                                                                                                                                                 GAAACAGCAATTGATGGAAATAACGGCTCAACAACTGAAGAAAAAGCAGCTGCTAAACAA
                                                                                                                                                                                                                                                                                                                                  AATACTTCTGCACATATAAAAATAGTACTCAAAATGTACGAAATGCTTTGGTAAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCGGAGCAAGTGGACAAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAAATGTTAATGTTCTAGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGAAAGACAAAGTGGATCAAGCAGTAGTTACTGCAAACGCTGATATAGATAATGCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTTGATCAAACTGATATTGACAAAGATTTAGAGGAAGAAAATAATGGAAATAAGGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTGAACGTAAAACAGCAATTGAAGCAATGAATGATTCGACTACTGAAGAACAACAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAGCCTCTGTGCAAGGAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTCAT
                                                                                                                     CAAGTTCAAACTGAAAAAACAACAGCTGATGCCGCAATAGATGCAGCACATACAAATGCG
                                                                                                                                                                                      ANATOTOATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGCTGGAGCTGGAGGAGCT 578
                                                                                                                                                                                                                                                                                                                                                                                                              CCTGATGCAAATGTTAAACCAGCAGCAAAACAAGCAATTGCAGATAAAGTACAAGCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAAACAATGATGTGGATAATGCAAAAACTACAAATGAAGCTACAATCGCAGCCATTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCTGCAAATACAAACAGTGATGTAACAACAGCTAAAGACAATAGTATTGCTGCAATTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Biosynexus Incorporated Foster, Simon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 63.2; DB 1
Pred. No. 0.0089;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches 388;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 2407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                         5724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       755
```

```
RESULT 3
US-10-793-626-3493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                        S
                                                                   밁
                                                                                                   á
                                                                                                                                       닭
                                                                                                                                                                       Ś
                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-793-626-3493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 3493
LENGTH: 3543
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 3493, Application US/10793626 Publication No. US20050255478A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PUJ480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR PILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OTHER INFORMATION: Description of Artificial Sequence: synthetic OTHER INFORMATION: nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                 5381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5141 AAGCTTTAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAG
                                                                                                       5621 AAGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATA
                                                                                                                                             1012
                                                                                                                                                                                                                                                                                                                        5441 GAGCTTCTGCAAGTACTACCTTGAATAAGACAGTTTCTTCTCATGTTGATCAAACTGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5261 GAGCAACAGTTGCTCATACAAATATTGGAAAACAATCAGTTATAGCTATTGTAAAAAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5201 ATCAAAAAACAATAAATACAATTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   274
                                                                                                                                                                                                                                                                                        892 TAGACACTCAACGTGATTTAATAAAGAATAATAAAGAGTCTACAGTTGAAGAAAAAGCCT
                                                                                                                                                                                                                                                    TTGACAAAGATTTAGAGGAAAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTAAAATTACAACGGCGAATGATCAAGATAGAAAAAATATCAATGTGACTGCAAAAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAACTAAAGATAATGCGAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATGCAAAAATCACTGCGAAGGGA 5868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAACAAATGAAGAAGTTAAAAATATTAAAAAACAAAGTATTGATGAAATTTCTAAAATAC
                                                                                                                                                                             TAGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGAC
                                                                                                                                                                                                                                                                                                                                                               AACCAATATCAACTATCAAACCACAAGCATT-----AAATGAAATCACTATTCAAC
                                                                                                                                                                                                                                                                                                                                                                                           ATACTATGACCAATACTATAGCAGTCGGAGTTGGAGGAGCAAAAGGAGCCTCTGTGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                     ATAAAATCAAGAAGTTTATGATACTAAAGACAAAACGATTGAAGCTATTCATAAAATCA 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGCAATCAGTGCGGATGTACAAGTTAAACCACAAGCATTTGAAGAAATCAATGCACAAG
                                                                       TACCTGTTATTGAAATTAAATCAGCTGCAAGAATGAAATTCATCAAAAAGCAGAAGTTA
                                                                                                                                                                                                                  CGGCTATCGATAAATTAATTAAAACTGCAGCAAGAATAGCCGAATCAATAGATAAAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 51.4;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               431;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 3543;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                     5740
                                                                         1131
                                                                                                                                                                                                                                                        5560
                                                                                                                                                                                                                                                                                                                               5500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5200
                                                                                                                                                1071
                                                                                                                                                                                5620
                                                                                                                                                                                                                        1011
                                                                                                                                                                                                                                                                                           951
                                                                                                                                                                                                                                                                                                                                                                   891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           660
                                                                                                             5680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    720
```

```
CURRENT APPLICATION NUMBER: US/10/485,517
CURRENT FILING DATE: 2004-02-02
PRIOR APPLICATION NUMBER: GB 018825.9
PRIOR FILING DATE: 2001-08-02
PRIOR APPLICATION NUMBER: GB 0200349.9
PRIOR APPLICATION NUMBER: GB 0200349.9
PRIOR FILING DATE: 2002-01-09
NUMBER OF SEQ ID NOS: 424
SOPTWARE: PAtentIN version 3.1
SEQ ID NO 121
LENGTH: 2189
RESULT 5
US-10-485-517-57
; Sequence 57, Application US/10485517
; Publication No. US20050256299A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 4
US-10-485-517-121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                        S
                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Simi
Matches 163;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 121, Application US/10485517 Publication No. US20050256299A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
ORGANISM: Staphylococcus aureus
-10-485-517-121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: Antigenic Polypeptides FILE REFERENCE: P100629WO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: University of Sheffield APPLICANT: Biosynexus Incorporated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Match 0.5%;
Local Similarity 46.4%;
les 163; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1192
                                                                                                                                                                                                                                                                                                                 2273
                                                                                                                                                                                                                                                                                                                                                                                      2213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2093 AACTTATTGGAAATGCAGCAGTTTTTTATGGAAACTATAAAAATAATGCTTCTGTGACAA 2152
                                                                                                                                                                                                                                                                                                                                                    463
                                                                                                                                                                                                                                                                                                                                                                                                                          403
                                                                                                                                                                ATGGTGAAAGAATGACAATTATTCTTCCGGATGGAACTTCAAAAACAGGAA 2443
                                                                                                                                                                                                                                                                                                  AGAGAGCTTTTGGAAAAGAACGAAAAACTCCAGAATATGATCCGAAAAGATATTGAATCTA
                                                                                                                                                                                                                                                                                                                                                                                                                        TTGCCGATCATGCTGAATTGGTATCGGAAGGAAAAATTGATATCAACAGTGAAAATAAAA 2212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACCAATTTATAACAGTGCAGATAAATTCAAAACTGAAGAAGATTATAAAGCTGAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCATTAAAAAGCCTGAAGCTATAGCAGAAATTCAAGAACTAGCAGATAA 1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAA 5909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGCTGTTAATAGAGCTAAAGAAATAGCAAATTCTGAAATTAATAAAATTTCTGTCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAAATCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCAATTAGACACAACTCTAACACAAGCAAATGTTTCAATTGACCAAGCATTAACAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTG
                                                                                                                                                                                                   CAAATGAAAAATGACTGATTTACAAGATACAAAATATGTTGTTTATGAAAGTGTTGAGA
                                                                                                                                                                                                                                         TTCAAGATAAACTTCCTGAAAATTAAAGGCTGAGTACAAGAAGAAATTAGAGGATACAA
                                                                                                                                                                                                                                                                                                                                                                                    TTGAATATAAAAATCCTTCAAAAATGGCAAAGTCTGTTATTGATAAATTAGAACTTTTAA
                                                                                                                                                                                                                                                                             AGAAAGCTTTAGATGAGCAAGTGAAATCAGCTATTACTGAATTCCAAAATGTACAACCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Foster, Simon
Mond, James
                                                                                                                            ATAACGAATCTATGATGGATACTTTTGTTAAACACCCTATTAAAACAGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. 1.6;
0; Mismatches 188;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 50.2; DB 1; Length 2189; Pred. No. 1.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>.</u>.
                                                                                                                              693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                     642
                                                                                                                                                                                                                                                                                                                                                                                      2272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5860
                                                                                                                                                                                                                                                                             582
                                                                                                                                                                                                                                                                                                                                                   522
                                                                                                                                                                                                                                                                                                                                                                                                                        462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
; TYPE: DNA
; ORGANISM: Staphylococcus aureus
US-10-485-517-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: DNA
; ORGANISM: Staphylococcus aureus
US-10-485-517-57
                                                                                                                                                                                                                                                                                                                                                                                                     US-10-485-517-12
                                                                                                                                                                                                                                                                                                                                             Sequence 12, Application US/10485517 Publication No. US20050256299A1 GENERAL INFORMATION:
                                                SOFTWARE: PatentIn version 3.1
SEQ ID NO 12
LENGTH: 3327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 46.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NO 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 163;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                         PRIOR APPLICATION NUMBER: GB 0200349.9
PRIOR FILING DATE: 2002-01-09
NUMBER OF SEQ ID NOS: 424
                                                                                                                                                            TITLE OF INVENTION: Antigenic Polypeptides FILE REFERENCE: P100629WO CURRENT APPLICATION NUMBER: US/10/485,517 CURRENT FILING DATE: 2004-02-02 PRIOR APPLICATION NUMBER: GB 0118825.9 PRIOR FILING DATE: 2001-08-02
                                                                                                                                                                                                                                                                       APPLICANT: University of Sheffield APPLICANT: Biosymexus Incorporated APPLICANT: Foster, Simon APPLICANT: Mond, James
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 3174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   University of Sheffield
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Foster, Simon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biosynexus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Incorporated
```

```
APPLICANT: Mond, James
ITITLE OF INVENTION: Antigenic Polypeptides
FILE REFERENCE: P100629WO
CURRENT APPLICATION NUMBER: US/10/485,517
CURRENT FILING DATE: 2004-02-02
PRIOR APPLICATION NUMBER: GB 0118825.9
PRIOR FILING DATE: 2001-08-02
PRIOR FILING DATE: 2001-08-02
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2093 AACTTATTGGAAATGCAGCAGTTTTTTATGGAAACTATAAAAATAATGCTTCTGTGACAA 2152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACCAATTTATAACAGTGCAGATAAATTCAAAACTGAAGAAGATTATAAAGCTGAAAAAT 1357
ATAACGAATCTATGATGGATACTTTTGTTAAACACCCTATTAAAACAGGTA 1648
                                                                            ATGGTGAAAGAATGACAATTATTCTTCCGGATGGAACTTCAAAAAACAGGAA 2443
                                                                                                                                                        CAAATGAAAAATGACTGATTTACAAGATACAAAATATGTTGTTTATGAAAGTGTTGAGA
                                                                                                                                                                                                                                 TIGCCGATCATGCTGAATTGGTATCGGAAGGAAAAATTGATATCAACAGTGAAAATAAAA 2212
                                                                                                                                                                                                                                                                                                                 AGAAAGCTTTAGATGAGCAAGTGAAATCAGCTATTACTGAATTCCAAAATGTACAACCAA
                                                                                                                                                                                                                                                                                                                                                                                          AGAGAGCTTTTGGAAAAGAAACGAAAACTCCAGAATATGATCCGAAAGATATTGAATCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCAAGATAAACTTCCTGAAAAATTAAAGGCTGAGTACAAGAAGAAATTAGAGGATACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGAATATAAAATCCTTCAAAAATGGCAAAGTCTGTTATTGATAAATTAGAACTTTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 50.2; DB 1;
Pred. No. 1.8;
0; Mismatches 188;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 3174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                 1537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1477
                                                                                                                                                                                                                                     2392
                                                                                                                                                                                                                                                                                                                                                                                              2332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1417
```

```
FILE REFERENCE: PUJ480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 4149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 7
US-10-793-626-4149/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                       밁
                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                ; OTHER INFORMATION: Description of Artificial Sequence: synthetic ; OTHER INFORMATION: nucleic acid sequence US-10-793-626-4149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                             ð
                                                                         밁
                                                                                                         5
                                                                                                                                                                                                                                   밁
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 4149, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 160; Conserv
                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                    Matches 267;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 3543
                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1565 TGCÁGAACCGÁATÁAAAAACAATCCTÁTGATGAÁGCÁGTTCAAAATGCTGAGTCTATCAT 1624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5799 TGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAAATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5979 AGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAGAACAGATGA
                                                                                                                                                         1116
                                                                                                                                                                                                                                       1176
                                                                           1056
                                                                                                                   620
                                                                                                                                                                                                                                                                             500
                                       680
966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATTAACGAAGACTTATCACAAAAAAGAAAATAAGTAATAAAAAA 6144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGG
                                                                                                                                                                                             GAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGCATCGGTTTATATGCGGCGG 619
                                                                                                                                                                                                                                                                        AAGITTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAAATTCCATTGAATCCGAATG 559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTAAATGAAGCGATGAAAGCATTAAAAGAAAGTATTAAGGATCAA 1910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATATCATCTAAAAATGCATTAGATGGTGTTGAACGATTAGCTCAAGATAAGCAAACTGC
                                                                                                                                                         ATATTTTGACTAATCTAGCTGAAAGTAAAAAATCAGATATAAGAGCCAATCAAGATGCAA 1057
                                                                                                                                                                                                                                       AAGCTATCACTGCAATTAAATTGATTAATGCAAATGCACATAAAAAGACAAGATGCCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCAAATTAATAATGCAACAACTCGTGATAAAGTGGCTGAAATCATTGCACAAGCGCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGAAATTCTCTAAATCATTTAGATCAATTAACACCAGCTCAACAACAAGCGCTAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCAGGATTAAATAATCCAACTATCAATAAAGGTAATGTATCAAGTGCGACTCAAGCAGT
ACAATATTAATGGTGCAAATACAAATGCGTTAGTGGATGAGAATTTAGAAGATGGTAAGC 937
                           TCAATATTAGTGATCGA---ATAAATTCTGGTCTGACCGGAGATTTAAAAGCTACCAAGA 736
                                                                           CTACTGAAGAGAAAAATACGGCAATACAATCTATAGATGATACGTTAGCACAAGCACGTA 997
                                                                                                                 ATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATTACAGATTTTAAAAATTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.5%;
nilarity 46.2%;
Conservative
                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                     0.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 48.4; DB 1;
Pred. No. 3.9;
0; Mismatches 186;
                                                                                                                                                                                                                                                                                                                Score 47.8; DB 1;
Pred. No. 5;
0; Mismatches 322;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 3327;
                                                                                                                                                                                                                                                                                                                                                          Length 3543;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                    6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5918
                                                                                                                   679
```

```
CURRENT APPLICATION NUMBER: US/10/793,62
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 3187
LENGTH: 3840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 8
US-10-793-626-3187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뮍
                                    밁
                                                                            ş
                                                                                                                     밁
                                                                                                                                                     Ś
                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-793-626-3187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3187, Application US/10793626

Publication No. US20050255478A1

GENERAL INFORMATION:

APPLICANT: KIMMERLY, WILLIAM JOHN

TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS

FILE REFERENCE: PU3480US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 44.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 267;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OTHER INFORMATION: Description of Artificial Sequence: OTHER INFORMATION: nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1037
                                                                                                                                                                                                                                                                                   2099 ATATTTTGACTAATCTAGCTGAAAGTAAAAATCAGATATAAGAGCCAATCAAGATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             737
797 AAAATTCAACTGTTGGAAAGAAATAGAAGAATATGTAAAAGGAAATACCAAAGCAAATA 856
                                                                                                                                                                                                                                          620 ATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATTACAGATTTTAAAAATTTAG
                                                                                                                                                                                                                                                                                                                         560 GAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGCATCGGTTTATATGCGGCGG
                                                                                                                                                                                                                                                                                                                                                                                                          500 AAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAAATTCCATTGAATCCGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACTAAGCTTGCAAA 1091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCTCAAAAAGCTATGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGCTGCGGAACAAACGACTTTAATAAATCAAAATCAAGATGCGACACTAGAAGA 585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGATGTGGAAGCTTCCGTAAGAGTAAATAAAGGAAAAGTCATAGGAAAGAATGTTGACA 1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGCAGCTTTAGCAAATCAAAATGTTACAGACGAAAAAAATAATATATTAGAAACAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAACAAGAAGCCCTTGAGAGACTTAATCAAGAAACAAATGGAGTCAATGATAGAATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATTAGTGCGAAAGCTACAA 916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCAAGCAATAGGTCAACAAAGGTCGACAATAGACCAGAATCAAAATGCTACAACAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAGTTACAACGTATTGTGTGTGTCAACTCAAACTAAAACACAAGCTAAAGCAGACATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAATGTTGAACCTATTGTAATTGTA--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAATTCAACTGTTGGAAAGAGAATAGAAGAATATGTAAAAGGAAATACCAAAGCAAATA 856
                                        AAAAGTTACAACGTATTGTGTGTCAACTCAAACTAAAACACAAGCTAAAGCAGACATTG
                                                                                                                       ACAATATTAATGGTGCAAATACAAATGCGTTAGTGGATGAGAATTTAGAAGATGGTAAGC
                                                                                                                                                           TCAATATTAGTGATCGA---ATAAATTCTGGTCTGACCGGAGATTTAAAAAGCTACCAAGA
                                                                                                                                                                                                      CTACTGAAGAGAAAATACGGCAATACAATCTATAGATGATACGTTAGCACAAGCACGTA 2218
                                                                                                                                                                                                                                                                                                                                                                    AAGCTATCACTGCAATTAAATTGATTAATGCAAATGCACATAAAAGACAAGATGCCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGGGAGATTTATAAAGAAAGAAGGGGGAAAAAGAAACTTATAACACTCCTTTAAGTTTAT
                                                                            CAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCTCAAAAAGCTATGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 47.8;
Pred. No. 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       - AAACCAAAGGCTAATGAAATAATTAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     322;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 3840;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                     6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                           2278
                                                                                                                                                                                                                                                                                                                                                                        2098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         877
                                                                                   796
                                                                                                                                                                  736
                                                                                                                                                                                                                                                 679
                                                                                                                                                                                                                                                                                                                               619
                                                                                                                                                                                                                                                                                                                                                                                                              559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        817
```

```
PRIOR APPLICATION NUMBER: 60/551,161
PRIOR FILING DATE: 2004-03-08
NUMBER OF SEQ ID NOS: 381
SOFTWARE: FASUSEQ for Windows Version 4.0
SEQ ID NO 131
LENGTH: 1293
TYPE: DNA
TYPE: DNA
ORGANISM: Lactobacillus acidophilus
S
                                                                                  र्
                                                                                                                                       밁
                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 9
US-11-074-176-131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                             밁
                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-11-074-176-131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 131, Applic
Publication No. US20
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 308; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Klaenhammer, Todd R.
APPLICANT: Russell, William M.
APPLICANT: Altermann, Eric
APPLICANT: Altermann, Eric
APPLICANT: McAuliffe, Olivia
APPLICANT: Peril, Andrea Azcarate
TITLE OF INVENTION: Nucleic Acid Sequences Encoding
TITLE OF INVENTION: Stress-Related Proteins and Uses Therefore
FILE REFERENCE: 5051-694
CURRENT APPLICATION NUMBER: US/11/074,176
CURRENT FILING DATE: 2005-03-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCATION: (0)...(0)
OTHER INFORMATION: ORF 1295; FtsY -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
NAME/KEY: CDS
LOCATION: (1)...(1293)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2339
                                                                                          5682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2459
                                                                                                                                                                                 5622 AGCTGCAGTAGGAGCTGGAGTAGCAGTTAATAAAATTACACAAAATACTTCTGCACATAT 568:
                                                                                                                                                                                                                                                                           5562 AGCTGAAAATACGAGTCAAGTGGTCACAAATGCGACAGTGCTTTCCGGAGCAAGTGGACA 5621
                                                                                                                                                                                                                                                                                                                                                                5502 TGACAAAGATTTAGAGGAAGAAATAATGGAAATAAGGAAAAGGCAAATGTTAATGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2576 AAGCTGCGGAACAAACGACTTTAATAAATCAAAATCAAGATGCGACACTAGAAGA 2630
                                                                                                                                         159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           977
                                                                                                                                                                                                                                 99
TAAAACAATTGGAATTGGAGCTGGAGCTGGAGGAGCTGGAGTGACAGGTTCTGT 5801
                                                                                       TAATGATACTCAAGATTCGGAAAAAATAGAAGAAACTGAAGAAAACACTTCTGATGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAATGTTGAACCTATTGTAATTGTA---AAACCAAAGGCTAATGAAATAATTAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGATGTGGAAGCTTCCGTAAGAGTAAATAAAGGAAAAGTCATAGGAAAGAATGTTGACA 1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAAACAAGAAGCCCTTGAGAGACTTAATCAAGAAACAAATGGAGTCAATGATAGAATAC 2458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCAAGCAATAGGTCAACAAAGGTCGACAATAGACCAGAATCAAAATGCTACAACAGAAG 2398
                                          ATCGGTTGAAGAAATTAGTGAAAAATGATAAAATAACTGAAGATGCTGATAATTCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTACAGCTGAAGCAAAGAATTTCTATGATGCAACTTTAGTTACTAAGCTTGCAAA 1091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGCAGCTTTAGCAAATCAAAATGTTACAGACGAAAAAAATAATATATTAGAAACAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGGGAGATTTATAAAGAAAGAAGGGGAAAAAGAAACTTATAACACTCCTTTAAGTTTAT 976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGAATCTGATGCTGTATTGGAAGCAGATGGAAATATAAAAATTAGTGCGAAAGCTACAA 916
                                                                                                                                                                                                                                                                                                                        TAAAAATGATGAAGAAGAGAAAAAAGATGAAGAAAAACAAAGTCAAGAACAGGAAGATAT
                                                                                                                                                                                                                              AGAAGAAACAACTGATATGGAAAATGACTCTTCTAATGTTGAAGATTCAGAAAAAGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/11074176 o. US20050250135A1
                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                   46.0%;
                                                                                                                                                                                                                                                                                                                                                                                                              Score 45.6; DB 7;
Pred. No. 8.9;
0; Mismatches 349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cell division protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1293;
                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                13;
                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                   5561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2518
                                                                                                                                                                                                                                                                                                                      98
                                                                                                                                                                                                                                                                                                                                                                                                              4;
                       밁
                                                        Ş
                                                                                                            밁
                                                                                                                                                     Ś
                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                           US-10-485-517-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 10
US-10-485-517-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Antigenic Polypeptides
FILE REFERENCE: P100629WO
CURRENT APPLICATION NUMBER: US/10/485,517
CURRENT FILING DATE: 2004-02-02
PRIOR APPLICATION NUMBER: GB 0118825.9
PRIOR FILING DATE: 2001-08-02
PRIOR FILING DATE: 2001-08-02
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
PRIOR FILING DATE: 2002-01-09
                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: PatentIn version 3.1
SEQ ID NO 11
LENGTH: 275
TYPE: DNA
ORGANISM: Staphylococcus aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 11, Application US/10485517 Publication No. US20050256299A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                            Query Match 0.5%;
Best Local Similarity 43.4%;
Matches 210; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: University of Sheffield APPLICANT: Biosynexus Incorporate APPLICANT: Foster, Simon APPLICANT: Mond, James
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5862 GAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAAC 592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5922
                                                                                                                                                                                                                                                    7524 ATCAGGAACAGTGGCAGTTACAAATATTAAAAGAAATTCCGGAGTTACTGTTGAAAAATTC
                                                               7644 AACAGCATATCAAGGTCCTGTAGGAGCATTGGGAATAGGAGCTGCCTATGCAGAATTAAA 770:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     279 AGAAACAGTTACTGAAGAGGTTGTGGATGAAGTACAATCTGAGGAAGAACCAGAACAAGA 338
                       GAAATTAAATGAAGCTAAAGCAGCTGCGAAACAAACGTTAGGTACATTAACACACATTAA
                                                                                                               AGCAGTTGAACAAGCATTGCAAAATGTGAACAGTACGAAGACGGCGTTGAACGGTGATGC
                                                                                                                                                         TTTTGTGAAAAGCAGCTGAAAAAGTAAATGTTAGATCGGATATTACAGGAAATGTTGCTTT 7643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTACTTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAAGGGTGGC-AATAATAAAGATGAAAAACTAGAATATAATTCGGATGATAAGCCAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATAT 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAAACAGCAGAGCAATTGA-----CTGAAGAACTTCGTGAAGAAGCAAAATTGCAAAA 566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTA 6041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTGTCTGGAGTGGCCCCTGCAGCAATAGGAGCCTCAACCAGTGTGAAATGAAATTACAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAGACCAATAAAGGTTTTGGTGCAAGACTGAATGCATTTTTTGCTAAATTT----AGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTAGAGCCCGAAAAAGGAAAATGATTCTCAAGAAGAACT---TTATGAAAAGGGGCCTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCAGTGAATAAGATTGTAAATAATACGATAGCAGAATTAAATCATGCAAAAATCACTGC 5861
                                                                                                                                                                                                       AGCAGTAAATGCAGCGAAAGCAATTTTAACAAAAGCTAGTGGTCAAAATGTAGACAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCAGCTACT 6171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAACGAAGACTTATCACAAAAAAGAAAATAAGTAATAAAAAAAGGATTTGTTACCAATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCTAAGTCACGTGATGAATTAAAACAAGTTATTGTTGAAAAATTGGTCGATCTTTATGA 626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTCGATGAAGACTTCTTTGATGATTTGGAAGATTTGTTAATTGAATCAGATGTTGGTTA 512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Biosynexus Incorporated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          695
                                                                                                                                                                                                                                                                                                 0.
                                                                                                                                                                                                                                                                                                                   Score 45.6; 1
Pred. No. 11;
                                                                                                                                                                                                                                                                                                 Mismatches 274;
                                                                                                                                                                                                                                                                                                                                         DB 1;
                                                                                                                                                                                                                                                                                                                                           Length 2275;
```

6163

685

5981 452

0

Gaps

905

965

```
Sequence 3637, Application US/10793626

Publication No. US20050255478A1

GENERAL INFORMATION:
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACII
FILLE REFERENCE: PU3480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 3637
LENGTH: 3309
TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                               δ
                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-793-626-3637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                      밁
                                                                           ঠ
                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-793-626-3637
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1266
                                                                                                                                                                                                  1285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7944 AGAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGACTGCTGAATCTCAAGGAGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1146
  6017
                                        1405
                                                                                                                                                            5897
                                                                                                                                                                                                                                                                                                                                                                                           5717 TAAAAAGCAAATCTCATTCATCTATTAAAACAATTGGAATTGGAGCTGGAGTTGGAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAATACAGTTAAAGCCAAAGCGCAACAATTAGATGGTGCTATGGGTCAATTAGAAACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTAGCTGCCGGAGCCATTATCTCAAAAGCAAAGAATGAAATGAATTCAGAGGTTGAAAT 7883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATTCGTGATAAAGACACGACGTTACAAAGTCAAAATTATCAAGATGCTGATGATGCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTA 8007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAGCCCTTCTAAAGGAATTGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAAAGGATTAACCGTAGGAGC 7823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACACGAGTATTAGCCAAATATTACCAAGTACAGCAGTCAAAACTAATGCATTAGCAGCTC 1404
                                                                                                                                                          CGGTAATTGCTAATTATGCAGGAACAGTGTCTGGAGTGGCCCGTGCAGCAATAGGAGCCT 5956
                                                                                                                                                                                                TTAACAATATTACTAATGCTACAACTACACAATTAGTTAATGATGCTAAAAATAGTGGTA
                                                                                                                                                                                                                                     AATTAAATCATGCAAAAATCACTGCGAAGGGAAATGTCGGAGTTATTACAGAGTCTGATG 5896
                                                                                                                                                                                                                                                                           AATAACTTGAAGTTTTATTCTCTGGATTAGGTAATTTGTCTTCTACAACGACTTTATCTA
                                                                                                                                                                                                                                                                                                                  GAGGAGCTGGAGTGACAGGTTCTGTAGCAGTGAATAAGATTGTAAATAATACGATAGCAG
                                                                                                                                                                                                                                                                                                                                                    TACCAACAAATCAGAGAAATTAATTACTTTTGTATTATTTTCAGCACTACCATCAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCA 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGTAATACACCTAAAGCAGATGTTGAAAGAGCAATGCAAGCTGTTACACAAGCAAATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAATGCACAACGTACAGCGTTAGACAATGAAATTACACAAGCAACAAATGTTGAAGGTGT 1025
  TTGCTAAAGAAGAAACAGATGATTATATTACTACTCAAGGGCAAGTAG 6064
                                          TAGCTAGCGAAGCTAAAAATAAAAACGCTATAATAGATCAAACACCAAATGCGACAGCAG 1464
                                                                             CAACCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAAAGATTCTACAGTGA 6016
                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description of Artificial Sequence: synthetic nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 45.6;
Pred. No. 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches 189; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 3309;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACIDS AND PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1145
                                                                                                                                                                                                1344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1085
                                                                                                                                                                                                                                                                                                                  5836
                                                                                                                                                                                                                                                                                                                                                        1224
                                                                                                                                                                                                                                                                                                                                                                                               5776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1205
                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
RESULT 12
US-10-793-626-1821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  멼
                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 13
US-10-793-626-3712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-793-626-1821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 1821
LENGTH: 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1821, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
                                                                                                     CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 3712
LENGTH: 3180
                                                                                                                                                                                                                                                                             Sequence 3712, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PU3480US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 0.5%;
Best Local Similarity 49.0%;
Matches 121; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PUJ480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION: Description of Artificial Sequence: synthetic OTHER INFORMATION: nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
OTHER INFORMATION: OTHER INFORMATION:
                                      TYPE: DNA
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1465 AAGAAAAAGAAGCAAATAATAAAGTTGATCGTCTTCAAGAAGAAG 1512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7119 AAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       618 CAATCAT 624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAAGAATTGGAAAGAATTATAGAAGGCGTTTTGGATATTCACGATATAGCTATTAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGATGTTGCAATAGCTGGAGCTAGTATGATTGCTTATGCAGTAACATTGGCAGCGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAGAT 7365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAAGA 7298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGAGCAGCAATCGGAACCAATGTCTTGGTAAATAATTTTTGGAACAGCTGTAGAAGATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGATCAAAAAGTAGAGCTTGTAAATTATGTTAAGGAAATTAGTGAAGCTACTCACACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGAGAACAAACTTTTTCTGCATCAATAGCAGAAAGATTAAAATTAGCAGTTCAGTTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   АСААGAТАААААGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGGTATTTCTAC 7358
Description of Artificial Sequence: nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 45.4; DB 1;
Pred. No. 7.8;
0; Mismatches 126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 663;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                        synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
Ş
                                                                                    밁
                                                                                                                       Ś
                                                                                                                                                                  밁
                                                                                                                                                                                            ş
                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                             ફ
                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; OTHER INFORMATION: Description of Artificial Sequence: synthetic ; OTHER INFORMATION: nucleic acid sequence US-10-793-626-3756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-793-626-3756/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-793-626-3712
                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 3756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 3756, Application US/10793626 Publication No. US20050255478A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 121;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PUJ480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 3650
                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity nes 121; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match 0.5%;
Local Similarity 49.0%;
                                                                                  1795
                                                                                                                                                                                                                                              1915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7359
                                                                                                                                                                                                                                                                                                                                                                 7119 AAATGTAACGGCAAAAGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAAATCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7119 AAATGTAACGGCAAAAGAGGAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  270 CAATCAT 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGACGAAGTTAACAAAGA 7298
        CAATCAT 1729
                                             AGAAGAT 7365
                                                                                    AGGAGAACAAACTTTTTCTGCATCAATAGCAGAAAGATTAAAATTAGCAGTTCAGTTTGC
                                                                                                                         ACAAGATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGGTATTTCTAC
                                                                                                                                                                TAAGAATTGGAAAGAAATTATAGAAGGCGTTTTGGATATTCACGATATAGCTATTAAAGA
                                                                                                                                                                                                   AAAAAATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAAGA
                                                                                                                                                                                                                                            TGATGTTGCAATAGCTGGAGCTAGTATGATTGCTTATGCAGTAACATTGGCAGCGGAAGA
                                                                                                                                                                                                                                                                                 AGGAGCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGTAGAAGATAG
                                                                                                                                                                                                                                                                                                                          AGATCAAAAAGTAGAGCTTGTAAATTATGTTAAGGAAATTAGTGAAGCTACTCACACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAAGAT 7365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGAGAACAAACTTTTTCTGCATCAATAGCAGAAAGATTAAAATTAGCAGTTCAGTTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAAGATAAAAAGTAAATGATGCTACGAAAAAATCTTACAATCAGCAGGTATTTCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAAGAATTGGAAAGAAATTATAGAAGGCGTTTTGGATATTCACGATATAGCTATTAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGATGTTGCAATAGCTGGAGCTAGTATGATTGCTTATGCAGTAACATTGGCAGCGGAAGA 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAGCAGCAATCGCAATGTCTTGGTAAATAATTTTTGGAACAGCTGTAGAAGATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATCAAAAAGTAGAGCTTGTAAATTATGTTAAGGAAATTAGTGAAGCTACTCACACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                    0.5%; Score 45.4; DB 1;
49.0%; Pred. No. 13;
ative 0; Mismatches 126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 45.4;
Pred. No. 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches 126; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1; Length 3180;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 3650;
                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                    1736
                                                                                                                                                                1796
                                                                                                                                                                                                     7298
                                                                                                                                                                                                                                            1856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7178
                                                                                                                         7358
                                                                                                                                                                                                                                                                                   7238
                                                                                                                                                                                                                                                                                                                          1916
                                                                                                                                                                                                                                                                                                                                                             7178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    89
                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                            RESULT 16
US-10-793-626-3777/c
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-793-626-2229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 15
US-10-793-626-2229
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC.
FILE REFERENCE: PU3480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 3777
                                                                                                                                                                                            Sequence 3777, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOPTWARE: PatentIn Ver. 2.1
SEQ ID NO 2229
LENGTH: 570
TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2229, Application US/10793626 Publication No. US20050255478A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 0.5%;
Best Local Similarity 47.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PU3480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE: OTHER INFORMATION: Description of Artificial Sequence: synthetic OTHER INFORMATION: nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5922
                                                                                                                                                                                                                                                                                                                                                                                   6216 AGCCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5862 GAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAAC 5921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            132
                                                                                                                                                                                                                                                                                                                                            432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGATTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAAGACGGTATATTAGATGTTATTAGCTCTGGTGTAAAAAATGATGTTAATAAAGTAAA 131
                                                                                                                                                                                                                                                                                                                                            CGGTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                        GATTAAGAAACTTAAAAATGGTATTAAAGACTTCTTTAATGAAGGTTTAGACTCTGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACA 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGTTTTÄÄCCTÄGÄCTTTATGAÄÄÄÄTGCÄCCÄTTÄCCATTTGÄTTTAATGACÄGCTÄT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAATATTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAGGATTTGTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGTACAAAAGCACTTGATAAAGCTAAAGATGTGTCTAGCACTGTTATCAAGGGTATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCTACAAAAGCATATGTAAAAGATTCTACAGTG-----ATTGCTAAAGAAGAAACAGA 6035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGACATTOGTOGTAAAGCAAGAGACATAGGTGGTACTACGTTTGACAAAGCAAAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                   6223
                                                                                                                                                                                                                                                                                                                                            439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 45.2;
Pred. No. 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches 188;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                  ACIDS
                                                                                                                                                                  AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ٠.
ص
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
```

371 6155

431

251

6095

311

191

```
ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; OTHER INFORMATION:
; OTHER INFORMATION:
US-10-793-626-3777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 17
US-10-793-626-3968/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             १
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                 밁
Ş
                                                               8
                                                                                                                                                                    ÚS-10-793-626-3968
                                                                                                                                                                                                                                                                                                                                                                     Sequence 3968, Application US/10793626

Publication No. US2005025478A1

GENERAL INFORMATION:

APPLICANT: KIMMERLY, WILLIAM JOHN

TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PU3480US

CURRENT APPLICATION NUMBER: US/10/793,626

CURRENT FILING DATE: 2004-03-04

CURRENT FILING DATE: 2004-03-04
                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 3968
LENGTH: 3002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                 Matches 156;
                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
TYPE: DNA
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                OTHER INFORMATION: Description of Artificial Sequence: synthetic OTHER INFORMATION: nucleic acid sequence
                                                                                                                                                                                                                    ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                     TYPE: DNA
                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5862 GAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAAC
 7746 ATTAGGAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tch 0.5%; al Similarity 47.3%; 174; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGATTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCCGGAG 6223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACA 6215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAATATTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAGGATTTGTTAC 6155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGTACAAAAGCACTTGATAAAGCTAAAGATGTGTCTAGCACTGTTATCAAGGGTATTGG 1959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCTACAAAAGCATATGTAAAAGATTCTACAGTG-----ATTGCTAAAGAAGAAACAGA 6035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAAGACGGTATATTAGATGTTATTAGCTCTGGTGTAAAAAATGATGATGATAAAAGTAAA
                                                               TGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGGTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATTAAGAAACTTAAAAATGGTATTAAAGACTTCTTTAATGAAGGTTTAGACTCTGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGTTTTAACCTAGACTTTATGAAAAATGCACCATTACCATTTGATTTAATGACAGCTAT
                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description of Artificial Sequence: synthetic
                                                                                                                   48.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>.</u>
                                                                                                   ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 45.2;
Pred. No. 13;
                                                                                                                   Score 45.2;
Pred. No. 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches 188;
                                                                                                   Mismatches 163;
                                                                                                                                  DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 2858;
                                                                                                                                  Length 3002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6
                                                                                                   ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2079
   7805
                                   1117
                                                                     7745
```

```
RESULT 18
US-10-793-626-3432/c
US-10-793-626-3432, Application US/10793626
; Publication No. US20050255478A1
; GENERAL INFORMATION:
; GENERAL OF VERNERAL WILLIAM JOHN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              בייייי באדטאיים באדטאיים Description of Artificial Sequence: synthetic of OTHER INFORMATION: nucleic acid sequence US-10-793-626-3432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                S
                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                   멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 174; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 3432
LENGTH: 3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERN
FILE REFERENCE: PU3480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILLING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 4472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6216
                                                                                                                                                                                                       1649
                                                                                                                                                                                                                                                                                                                                                                                                          6036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAAC 5921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAAGAAAAACAGAGTGAC 7982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATGAATTCAGAGGTTGAAATTGAGAGAGAGTATTTTCAATGAAGAAAATAGAGTAACTAG
AGCCGGAG 6223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCTACAAAAGCATATGTAAAAGATTCTACAGTG-----ATTGCTAAAGAAGAAACAGA 6035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAAGACGGTATATTAGATGTTATTAGCTCTGGTGTAAAAAATGATGTTAATAAAGTAAA 1830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACAGAATCATAATTAAATTAT 855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGATCATGATGGTAAAGAATTTAAGTATGATATTTATGAAATTACAGCTAAAAAAAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAA---AAGCAAAGAATGA 7862
                                                                                                                                   CAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACA 6215
                                                                                                                                                                                                                                                                                                                                       TGATTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGTACAAAAGCACTTGATAAAGCTAAAGATGTGTCTAGCACTGTTATCAAGGGTATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGACATTGGTGGTAAAGCAAGAGACATAGGTGGTACTACGTTTGACAAAAGCAAAAGACAT 1770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCTGAATCTCAAGGAGCTTCT 8004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGATATGATCCTGAATATGGTGCTAGACCACTCATTAGAGCAATTCAAAAAACGGTTGA
                                                                   GATTAAGAAACTTAAAAATGGTATTAAAGACTTCTTTAATGAAGGTTTAGACTCTGCAGG
                                                                                                                                                                                                       TGGTTTTAACCTAGACTTTATGAAAAATGCACCATTACCATTTGATTTAATGACAGCTAT
                                                                                                                                                                                                                                                                   TAATATTAACGAAGACTTATCACAAAAAAGAAAATAAGTAATAAAAAAGGATTTGTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.5%; initial of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 45.2;
Pred. No. 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches 188;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1057
                                                                              1530
                                                                                                                                                                                                              1590
                                                                                                                                                                                                                                                                          6155
                                                                                                                                                                                                                                                                                                                                              1650
                                                                                                                                                                                                                                                                                                                                                                                                                 6095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7922
```

밁

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                       RESULT 20
US-10-793-626-4138
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OTHER INFORMATION: Description of Artificial Sequence: synthetic; OTHER INFORMATION: nucleic acid sequence US-10-793-626-3676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-793-626-3676/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3676, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC
FILE REFERENCE: PUJ480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
                                                                                   Sequence 4138, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERWIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PUJ480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT APPLICATION NUMBER: US/10/793,626
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
             NUMBER OF SEQ ID NOS: 4472
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 4138
LENGTH: 3379
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTMARE: PatentIn Ver. 2.1
SEQ ID NO 3676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA ORGANISM: Artificial Sequence FEATURE:
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 3295
                                                                                                                                                                                                                                                                                                   1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1325
                                                                                                                                                                                                                                                                                                                                                                                        7923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTAGGAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAA
                                                                                                                                                                                                                                                                                                 AACAGAATCATAATTAAATTAT 1004
                                                                                                                                                                                                                                                                                                                               TGCTGAATCTCAAGGAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                      CCCTTCTAAAGGAATTGGAAGAAATCAATGTCAAAGTGGAAAAAAGAAAACAGAGTGAC 7982
                                                                                                                                                                                                                                                                                                                                                                                                                                               AATGAATTCAGAGGTTGAAATTGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAG 7922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAA---AAGCAAAGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCT
                                                                                                                                                                                                                                                                                                                                                            TGATCATGATGGTAAAGAATTTAAGTATGATATTTATGAAATTACAGCTAAAAAAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGATATGATCCTGAATATGGTGCTAGACCACTCATTAGAGCAATTCAAAAAACGGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         48.44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 45.2;
Pred. No. 14,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches 163;
                                                                                                                                                                                                                                                                                                                               8004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3295;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           u
-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7745
                                                                                                                                                                                                                                                                                                                                                                                                                     1086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
               용
                                      Ś
                                                                      멍
                                                                                                 Ś
                                                                                                                                                                                            US-10-793-626-4114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-793-626-4114/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 174;
                                                                                                                                                                                                                                                                    TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5922
               CGGTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCCGGAG
```

```
; FEATURE:
; OTHER INFORMATION:
; OTHER INFORMATION:
US-10-793-626-4138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 4114, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
                                                                                                                                Query Match
Best Local Similarity
Matches 156; Conserv
                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 4114
LENGTH: 3518
                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PU3480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 4472
                                                                                                                                                                                                                                     ORGANISM: Artificial Sequence FEATURE:
OTHER INFORMATION: Description OTHER INFORMATION: nucleic ac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1261 GÁÁAGACGGTATATTÁGATGTTATTAGCTCTGGTGTAAAAÁAATGATGTTAATAAAGTAAA 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5862 GAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAAC 5921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATTAAGAAACTTAAAAATGGTATTAAAGACTTCTTTAATGAAGGTTTAGACTCTGCAGG 1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGATTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCT
ATTAGGAAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAA
                                                                                    TGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCT 7745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACA 6215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAATATTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAGGATTTGTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGTACAAAAGCACTTGATAAAGCTAAAGATGTGTCTAGCACTGTTATCAAGGGTATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGACATTGGTGGTAAAGCAAGAGACATAGGTGGTACTACGTTTGACAAAGCAAAAGACAT 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCTACAAAAGCATATGTAAAAGATTCTACAGTG-----ATTGCTAAAGAAGAAGAACAGA 6035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGTTTTAACCTAGACTTTATGAAAAATGCACCATTACCATTTGATTTAATGACAGCTAT
                                                                                                                                0.5%;
llarity 48.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                         Description of Artificial Sequence: synthetic nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description of Artificial Sequence: synthetic nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.5%;
47.3%;
                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                Score 45.2; DE
Pred. No. 14;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 45.2; DB Pred. No. 14; 0; Mismatches
                                                                                                                                                                           DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
                                                                                                                                163;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              188;
                                                                                                                                                                           ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 3379;
                                                                                                                                                                           Length 3518;
                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                u
T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6
                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5981
      7805
                                              3080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; OTHER INFORMATION: Description of Artificial Sequence: synthetic; OTHER INFORMATION: nucleic acid sequence
US-10-793-626-3497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 22
US-10-793-626-3497/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         र्
                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
밁
                              á
                                                                     밁
                                                                                                 S
                                                                                                                                           밁
                                                                                                                                                                           ঠ
                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: PATENTIN VET. 2.1
SEQ ID NO 3497
LENGTH: 3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 174; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 3497, Application US/10793626 Publication No. US20050255478A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: KIMMERLY, WILLIAM JOHN TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS FILE REFERENCE: PU3480US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2959
                                                                                                                                                                                                                                                                                                                                                                                                  5922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3019
                                                                                                                                                                               9609
                                                                                                                                                                                                                                                    6036
                                                                                                                                                                                                                                                                                                                        5982 ATCTACAAAAGCATATGTAAAAGATTCTACAGTG-----ATTGCTAAAGAAGAAACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5862 GAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2839 AACAGAATCATAATTAATTAT 2818
                                                                                                         6156
                                                                                                                                                                                                                  319
 139
                                                                     199
                                                                                                                                             259
                                                                                                                                                                                                                                                                                        379
                                                                                                                                                                                                                                                                                                                                                              439
                                                                                                                                                                                                                                                                                                                                                                                                                                     499 GAAAGACGGTATATTAGATGTTATTAGCTCTGGTGTAAAAAATGATGTTAATAAAGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAGAAAACAGAGTGAC
                                                                                                                                                                                                                                           TGATTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGATCATGATGGTAAAGAATTTAAGTATGATATTTATGAAATTACAGCTAAAAAAAGAAAC 2840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATÄÄTTTÄAGCGAATTGÄTTTTAGÄTGGAÄATAAAATTGÄÄGGTAÄAGAAGTAÄCAAT 2900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATGAATTCAGAGGTTGAAATTGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAG 7922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGATATGATCCTGAATATGGTGCTAGACCACTCATTAGAGCAATTCAAAAAAACGGTTGA
                                                                                                       CAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACA 6215
                                                                                                                                                                             TAATATTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAAGGATTTGTTAC 6155
                                                                                                                                                                                                                                                                                                                                                              AGACATTGGTGGTAAAGCAAGAGACATAGGTGGTACTACGTTTGACAAAGCAAAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                  TGCTGAATCTCAAGGAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAA---AAGCAAAGAATGA
CGGTGGAG 132
                                   AGCCGGAG 6223
                                                                     GATTAAGAAACTTAAAAATGGTATTAAAGACTTCTTTAATGAAGGTTTAGACTCTGCAGG
                                                                                                                                                                                                                  AGGTACAAAAGCACTTGATAAAGCTAAAGATGTGTCTAGCACTGTTATCAAGGGTATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0.5%;
                                                                                                                                           ACTITATGAAAAATGCÁCCATTÁCCATTTGATTTAATGACAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 45.2;
Pred. No. 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches 188;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 3841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7982
                                                                                                                                                                                                                                                      6095
                                                                                                                                                                                                                                                                                                                            6035
                                                                                                                                                                                                                                                                                                                                                                                                   5981
                                                                                                                                                                                                                                                                                          320
                                                                                                                                                                                                                                                                                                                                                                380
                                                                                                                                                                                                                                                                                                                                                                                                                                       440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5921
                                                                                                                                                                                                                    260
```

```
당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 23
US-10-793-626-3856/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-793-626-3856
                                                                                                                                                                                                                                                                                                                                                               US-10-793-626-2905
                                                                                                                                                                                                                                             Sequence 2905, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PU3480US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3856, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 3856
LENGTH: 3985
                                                                                                                CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: Patentin Ver: 2.1
SEQ ID NO 2905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERWIDIS NUCLBIC
FILE REFERENCE: PUJ480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR PILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OTHER INFORMATION: Description of Artificial Sequence: synthetic OTHER INFORMATION: nucleic acid sequence
                                         ORGANISM: Artificial Sequence FEATURE:
   OTHER INFORMATION:
OTHER INFORMATION:
                                                                              TYPE: DNA
                                                                                              LENGTH: 4719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7686 TGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   870
                                                                                                                                                                                                                                                                                                                                                                                                                                        630 AACAGAATCATAATTAAATTAT 609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTAGGAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATGAATTCAGAGGTTGAAATTGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCCTTCTAAAGGAATTGGAAGAGAAATCAATGTCAAAGTGGAAAAAAGAAAACAGAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGATAATTTAAGCGAATTGATTTTAGATGGAAATAAAATTGAAGGTAAAGAACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCTGAATCTCAAGGAGCTTCT 8004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGATCATGATGGTAAAGAATTTAAGTATGATATTTATGAAATTACAGCTAAAAAAAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGATATGATCCTGAATATGGTGCTAGACCACTCATTAGAGCAATTCAAAAAACGGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAA---AAGCAAAGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
Description of Artificial nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      48.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 45.2;
Pred. No. 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      163;
                         Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 3985;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACIDS
                         synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AND PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۲.
```

2105

1007 1985

2045

887

1865

```
ş
                                                                                                                    밁
    Ş
                                          밁
                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 25
US-10-485-517-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Mond, James
TITLE OF INVENTION: Antigenic Polypeptides
FILE REFERENCE: P100629W0
CURRENT APPLICATION NUMBER: US/10/485,517
CURRENT FILING DATE: 2004-02-02
PRIOR APPLICATION NUMBER: GB 0118825.9
PRIOR FILING DATE: 2001-08-02
PRIOR APPLICATION NUMBER: GB 0200349.9
PRIOR FILING DATE: 2002-01-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-793-626-2905
                                                                                                                                                                                                                                                                         SOFTWARE: Patentin version 3.1
SEQ ID NO 13
LENGTH: 2119
TYPE: DNA
ORGANISM: Staphylococcus aureus
S-10-485-517-13
                                                                                                                                                                                                Query Match 0.5%;
Best Local Similarity 44.1%;
Matches 189; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 13, Appropriate Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: University of Sheffield APPLICANT: Biosynexus Incorporated APPLICANT: Foster, Simon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                            1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5922
                                                                                                                    1686 AACTTCAGCTGTTACTTCTAATAAAATGCATTAAATGGTTATGAAAAATTAGCACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5862 GAAGGGAAATGTCGGAGTTATTACAGAGTCTGATGCGGTAATTGCTAATTATGCAGGAAC 5921
          768
                                                                                                                                                      648 AAAGACAGGAATTACAGATTTTAAAAATTTAGTCAATATTAGTGATCGAATAAATTCTGG
                                        TAAAACAGATGCTGCAAGAGCAATTGATGCATTACCACATTTAAATAATGCACAAAAAAGC 1805
                                                                            TCTGACCGGAGATTTAAAAGCTACCAAGACAAAATCTGGAGATATTATTCTTTCAGCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COGTOGAG 3562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCCGGAG 6223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATTAAGAAACTTAAAAAATGGTATTAAAGACTTCTTTAATGAAGGTTTAGACTCTGCAGG 3554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAATAGTTCAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATCTACAAAAGCATATGTAAAAGATTCTACAGTG-----ATTGCTAAAGAAGAAAACAGA 6035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAAGACGGTATATTAGATGTTATTAGCTCTGGTGTAAAAAATGATGTTAATAAAGTAAA
  CATAGATTCTCCTCAAAAAGCTATGGGAAAAAATTCAACTGTTGGAAAGAGAATAGAAGA 827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGTTTTAACCTAGACTTTATGAAAAATGCACCATTACCATTTGATTTAATGACAGCTAT 3494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAATATTAACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAAGGATTTGTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATTATATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGTACAAAAGCACTTGATAAAGCTAAAGATGTGTCTAGCACTGTTATCAAGGGTATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGACATTGGTGGTAAAGCAAGAGACATAGGTGGTACTACGTTTGACAAAAGCAAAAGACAT 3314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Application US/10485517
No. US20050256299A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0.5%;
47.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Incorporated
                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches 188;
                                                                                                                                                                                                                Score 45; DB
Pred. No. 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 45.2;
Pred. No. 16;
                                                                                                                                                                                                Mismatches 240;
                                                                                                                                                                                                                                  DB 1; Length 2119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 4719;
                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6
                                                                                                                                                                                              °,
                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 26
US-10-793-626-4448/c
US-10-793-626-4448, Application US/10793626
; Sequence 4448, Application US/10793626
; Publication No. US20050255478A1
; GENERAL INFORMATION:
; APPLICANT: KIMMERLY, WILLIAM JOHN
; TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACI:
FILE REFERENCE: PU3480US
; CURRENT APPLICATION NUMBER: US/10/793,626
; CURRENT FILING DATE: 2004-03-04
; PRIOR APPLICATION NUMBER: 60/164,258
; PRIOR FILING DATE: 1999-11-09
; PRIOR FILING DATE: 1999-11-09
                    S
                                                            밁
                                                                                          δ
                                                                                                                                    밁
                                                                                                                                                                      Ş
                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; OTHER INFORMATION: Description of Artificial Sequence: synthetic; OTHER INFORMATION: nucleic acid sequence US-10-793-626-4448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 4448
LENGTH: 2621
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
                      4673
                                                                                              4613
                                                                                                                                      1776
                                                                                                                                                                                                                1836
                                                                                                                                                                                                                                                      4493
                                                                                                                                                                                                                                                                                                                                 4433
                                                                                                                                                                                                                                                                                                                                                                       1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1926
                                                                                                                                                                          4553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1806 AGATGTTAAATCTAAAATTAATGCTGCATCAAATATTGCTGGCGTAAATACTGTTAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            948
AAATTCATG
                                                                                                                                                                                                                                                                                                                       TAAATGGAAAAGATAAAAAATATTTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTT
                                                                                                                                                                                                                ACATGACGATTGCACAAGAAGAAATTTTCGGACCTGTCATGTCTGTAATCACTTATAATA
                                                                                                                                                                                                                                                                                           ATTACATTGATAAAGGTATCAATGAAGGAGCAGAGTTATTCTACGGTGGTCCAGGTAAAC
                                                                                                                                                                                                                                                                                                                                                                                                           ATGTCATTGCCAAAGATGTCAAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGTTTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACTTTAGT
                                                            TTGGTAAAGATAAAGATACATTGAGACATGTTGCTCGTTCAATCGAAGCTGGTACAATTG
                                                                                              CTGTTAAAAATTAAATTTAAAGCAGAATTGAGTGGAAGCAATAAGGAAGCCGGAGAGGATA 4672
                                                                                                                                      ATCTTGACGAAGCTATTGAAATTGCTAATGATACTAAATATGGTCTTGCTGGCTATGTTA
                                                                                                                                                                          CTGCTTTATCGGTTGCTGGAACGGATAAATCCGCTGGAGGAGGTAGCTATTGCAGTCAATA 4612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGATCAAGTTACTGAAGCGATGAATCAAGTGAATTCTGCTAAAAATAACTTAGATGGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGAAAAGTCATAGGAAAGAATGTTGACATTACAGCTGAAGCAAAGAATTTCTATGATGC 1067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATGCGGTACAAGCTGCGAAAGATATTTTAAATAAATCAAATGGTCAAAATAAAACGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAACTTATAACACTCCTTTAAGTTTATCAGATGTGGAAGCTTCCGTAAGAGTAAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATATGTAAAAGGAAATACCAAAGCAAATATTGAATCTGATGCTGTATTGGAAGCAGATGG
                                                                                                                                                                                                                                                      ATTATACGAAGGAACAACTAGAAAAAGCAAAGAAAAAAAGAAGGAGCGGTCATTGTAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACGACGCTTAATAGTCAAAACTATCAAGATGCGACACCTAGTAAGAAAACAGCATACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1076
                      4681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0.5%;
46.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2114
                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 45; DB 1
Pred. No. 14;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                   165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 2621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

Gaps

0

1897 4432

4492

1657

1777 4552 1837

밁

1656 AAATTAATG 1648

```
Sequence 835, Application US/10793626

Publication No. US20050255478A1

GENERAL INFORMATION:

APPLICANT: KIMMERLY, WILLIAM JOHN

TITLE OF INVENTION: STARHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROT

FILE REFERENCE: PU3480US

CURRENT FILING DATE: 2004-03-04

PRIOR APPLICATION NUMBER: 60/164,258

PRIOR APPLICATION NUMBER: 60/164,258

PRIOR FILING DATE: 1999-11-09

NUMBER OF SEQ ID NOS: 4472

SOFTWARE: PRECENTIN Ver. 2.1

SEQ ID NO 835

LENGTH: 1206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 27
US-10-793-626-3353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-793-626-3353
                                                                                                                                                                                                                                                                                                                  RESULT 28
US-10-793-626-835
                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 3353, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PU3480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 3353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION: OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 3589
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4493
                                                                                                                                                                                                                                                                                                                                                                                                                                           4673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4433 TAAATGGAAAAGATAAAAAATATTTAGAAGATCGTGGTATTAATACGACTGGAAATGGTT 4492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               139
                                                                                                                                                                                                                                                                                                                                                                                                      379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGTTAAAAATTAAAATTTAAAGCAGAATTGAGTGGAAGCCAATAAGGAAGCCGGAGAGGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGCTTTATCGCTTGCTGGAACGGATAAATCCGCTGGAGGAGTAGCTATTGCAGTCAATA 4612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTATACGAAGGAACAACTAGAAAAAAGCAAAGAAAAAAGAAGGAGCGGTCATTGTAAATG 4552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGAAGGATTAGATAAAGGATATTTTGCGCGTCCAACTATATTTAATGTAGATAATC 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTACATTGATAAAGGTATCAATGAAGGAGCAGAGTTATTCTACGGTGGTCCAGGTAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTCATTGCCAAAGATGTCAAAGGAAGTTCTGATCTAGCAAAAGAATATCAGGCTTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                           AAATTCATG 4681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACATGACGATTGCACAAGAAGTTTTCGGACCTGTCATGTCTGTAATCACTTATAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGGTAAAGATAAAGATACATTGAGACATGTTGCTCGTTCAATCGAAGCTGGTACAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCTTGACGAAGCTATTGAAATTGCTAATGATACTAAATATGGTCTTGCTGGCTATGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Description of Artificial Sequence: synthetic nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                      387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0.5%;
46.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 45; DB 1;
Pred. No. 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches 165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 3589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                         PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
; FEATURE:
; OTHER INFORMATION:
; OTHER INFORMATION:
US-10-793-626-835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 29
US-10-793-626-4188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                           Ś
                                                            В
                                                                                         Ś
                                                                                                                             멍
                                                                                                                                                          S
밁
                                                                                                                                                                                                                                                                US-10-793-626-4188
                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: Pate
SEQ ID NO 4188
LENGTH: 3354
                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS.
FILE REFERENCE: PU3480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: Patentin Ver: 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 4188, Application US/10793626
Publication No. US20050255478A1
                                                                                                                                                                                              Matches 148;
                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                             OTHER INFORMATION: Description of Artificial Sequence: OTHER INFORMATION: nucleic acid sequence
                                                                                                                                                                                                                                                                                                            ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     554 CGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGCATCGGTTTATATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     494 ATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAAATTCCATTGAATC 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     734
                                                                                                                           964 AAGTAATAGATCATATCGGTGCAGGTTCAGTTTCAGAAAAAAACAATTGATAAAAACCAAG
                                                                                           554 CGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGCATCGGTTTATATG
                                                                                                                                                          494 ATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAAATTCCATTGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCTCAAAAAAGCTATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGATTTAAAAGCTACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACAAACTATTGAATCTGAAACAACTTTTACAATTAGAAAATCCTTTAAACATTTAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATTACAGATTTTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCGAAAACCAACTGTTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAAAATTCAACTGTTGGA 813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTATTAACTCAGGTGTGATAGCAGTCTTAGCTACATACGGTTATACTAAAGTGCGAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATATTTCGCTACAAGGTGAAGAATAAAAGCTGGTGATATTGTACTACATAAAGGTATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAATTCGAATAATGACTGGTGCTCAAATTCCTTCTGGAGCTGATGCCGTAGTAATGTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGTAATAGATCATATCGGTGCAGGTTCAGTTTCAGAAAAAAACAATTGATAAAAACCAAG
AACAAACTATTGAATCTGAAACAACTTTTACAATTAGAAAATCCTTTAAAACATTTAGAAA
                             CGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATTACAGATTTTAAAA
                                                               CAATTCGAATAATGACTGGTGCTCAAATTCCTTCTGGAGCTGATGCCGTAGTAATGTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description of Artificial Sequence: nucleic acid sequence
                                                                                                                                                                                                            46.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 44.8;
Pred. No. 1:
                                                                                                                                                                                                                 Score 44.8;
Pred. No. 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                   17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BB
                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           172;
                                                                                                                                                                                                172;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1206;
                                                                                                                                                                                                                                 Length 3354;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           synthetic
                                                                                                                                                                                                                                                                                                  synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AND PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            613
     1143
                                                                   1083
                                                                                                                                    1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         484
                                     673
                                                                                                   613
                                                                                                                                                                   553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          793
```

```
밁
                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; OTHER INFORMATION: Description of Artificial Sequence; OTHER INFORMATION: nucleic acid sequence US-10-793-626-4025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                  US-10-793-626-3818
                                                                                                                     RESULT 31
                                                                                                                                                                        밁
                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 30
US-10-793-626-4025/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
            Sequence 3818, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 4025, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
APPLICATT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PUJ480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 4025
LENGTH: 3497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 148; Conserv
 FILE REFERENCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                            3176
                                                                                                                                                                                                                                                                                                                                                                                                                                             3236
                                                                                                                                                                                                                                          3056
                                                                                                                                                                                                                                                                                                           3116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1144
                                                                                                                                                                        2996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1264 CTCGAAAACCAACTGTTGCA 1283
                                                                                                                                                                                                                                                                                                                                         674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  674
                                                                                                                                                                                                        794
                                                                                                                                                                       CTCGAAAACCAACTGTTGCA
                                                                                                                                                                                                      GAAAAATTCAACTGTTGGA 813
                                                                                                                                                                                                                                        GTATTAACTCAGGTGTGATAGCAGTCTTAGCTACATACGGTTATACTAAAGTGCGAGTGG
                                                                                                                                                                                                                                                                      AGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCTCAAAAAGCTATGG
                                                                                                                                                                                                                                                                                                                                                                        AACAAACTATTGAATCTGAAACAACTTTTACAATTAGAAAATCCTTTAAAACATTTAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                          CGGCGGATATTAGATTGAAAGATACTGCAATACTAAAGACAGGAATTACAGATTTTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                         CAATTCGAATAATGACTGGTGCTCAAATTCCTTCTGGAGCTGATGCCGTAGTAATGTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAATGGAAGCATTACGGTAGAAGGAAAAATCAATGCTGTTGAAGGCATCGGTTTATATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGTAATAGATCATATCGGTGCAGGTTCAGTTTCAGAAAAAACAATTGATAAAAACCAAG 3237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATTAACTCAGGTGTGATAGCAGTCTTAGCTACATACGGTTATACTAAAGTGCGAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGACAAAATCTGGAGATATTATTCTTTCAGCTCACATAGATTCTCCTCAAAAAGCTATGG 793
                                                                                                                                                                                                                                                                                                       ATATTTCGCTACAAGGTGAAGAATAAAAGCTGGTGATATTGTACTACATAAAGGTATGC 3057
                                                                                                                                                                                                                                                                                                                                       ATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGATTTAAAAAGCTACCA 733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGGTAAAGTTTTTAATGGAATCATTCCAGTAGATGGAAAAGTAAAAATTCCATTGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAAAATTCAACTGTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATATTTCGCTACAAGGTGAAGAATAAAAGCTGGTGATATTGTACTACATAAAGGTATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTTAGTCAATATTAGTGATCGAATAAATTCTGGTCTGACCGGAGATTTAAAAGCTACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
PU3480US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             46.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 44.8;
Pred. No. 1
                                                                                                                                                                       2977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches 172;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 3497;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  synthetic
               AND PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>.</u>.
                                                                                                                                                                                                                                                                                                                                                                                                                                           3177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1203
                                                                                                                                                                                                                                                                                                                                                                          3117
                                                                                                                                                                                                                                                                                                                                                                                                           673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             613
                                                                                                                                                                                                                                                                       793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
              S
                                             밁
                                                                             S
                                                                                                                밁
                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
```

```
CURRENT APPLICATION NUMBER: US/10/793,62
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: Patentin Ver: 2.1
SEQ ID NO 3849
LENGTH: 3170
                                                                                                                                                                                                                                                                                            ; OTHER INFORMATION:
; OTHER INFORMATION:
US-10-793-626-3849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 32
US-10-793-626-3849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-793-626-3818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 3849, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 3818
LENGTH: 3066
                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                    Matches 271;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PU3480US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILLING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Artificial Sequence FEATURE: OTHER INFORMATION: Descriptio OTHER INFORMATION: nucleic ac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                     FEATURE:
                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity les 101; Conserv
6103 AACGAAGACTTATCACAAAAAAGAAAAATAAGTAATAAAAAAGGATTTGTTACCAATAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7183
                                                                                                                                                                           TCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTAT 6042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAAAATATTTAAGA 2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATACTTCTGTAAAA 7377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATAAAAAAGTAAATGATGCTACGAAAAAAATCTTACAATCAGCAGGTATTTCTACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATAGTGAAGCTAATGCTAGCGATTCAGAAAATAATTCAGAAGAAAGTATCAAGGATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTAGAAACTGAAGACAATCAGAATGATACAAATATTGAAAACTCAGTATCTAACACAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGCAATCGGAGCCAATGTCTTGGTAAATAATTTTTGGAACAGCTGTAGAAGATAGAAAA
                                                          ATTAAAGATACCAACAATCAAGATGAGTTTGCTTTAAAATATTTCGGACATTGTATTGAT
                                                                                              ATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATATT
                                                                                                                                       TTTACACATGCAATTGAAGAAGAATTTAAAGAAATAGCTACAGTAGCAATTGATTTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGTCAGAGTCTCAAGATACTAAAATTAAAGAATTAGAAAAGCTTGCAAATGACAATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATTCTGAAGGAAAAGGAACAGAAGTTTTAAAAAACTTTAGACGAAGTTAACAAAGAACAA
                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Description of Artificial Sequence: synthetic nucleic acid sequence
                                                                                                                                                                                                                                                                                                               Description of Artificial Sequence: nucleic acid sequence
                                                                                                                                                                                                                                    0.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 44.6; Di
Pred. No. 17;
O; Mismatches
                                                                                                                                                                                                                                      Score 44.6;
Pred. No. 18;
                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멂
                                                                                                                                                                                                                    324;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94;
                                                                                                                                                                                                                                                        1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۲,
                                                                                                                                                                                                                    Indels 12;
                                                                                                                                                                                                                                                      Length 3170;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 3066;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                   synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                6102
                                                                                                                                       1244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7242
                      6162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2272
                                                                                                                                                                                                                  N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 33
US-10-793-626-2051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                            S
                                                                                                      밁
                                                                                                                                                   ş
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                            5
밁
                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-793-626-2051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: PATENTIN Ver. 2.1
SEQ ID NO 2051
LENGTH: 4329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2051, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS
FILE REFERENCE: PU3480US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: Description of Artificial Sequence: OTHER INFORMATION: nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6103
316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTAGTAGGTTCTGTTGGTGGTGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAAT 6402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATAAAGTCGTTTTTGAAACAGATTCAACAAATCACGATGATGACCTTGCATCGTTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGA 6342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGGCATGTAATGGTAGTTT-----GGTTAAAGCATTTAGACAGTGTGGCTTTGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAAT 6282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAA-----ATGTTTTAAAAGTCTTAGTTTCAAATGACATTGAGAGAAATCATTTTGAT 1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCAGCTACTCATACTTTAAAATCTTTATTGGCAAATGCCGCTGGTTCAGGACAAGCCGGA 622
                                                                                                                                                                                                                                                 TCTACAAAAGCATATGTAAAAGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTAT 6042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCAAAGTAGCTATTGAAGGTGTTATATTTGATATTAACCTAAAAGAACTTAAAAGTGGA 1772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCGCAGCAGCCGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAGAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTATAAAAAGAAATACCAAGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGTTTC 6462
ATTACTACTCAAGGGCAAGTAGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATATT 6102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAAAGA 6589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTGGAAAACCAATTCAGATTGAAAATATAAAACCAATTGAATCAATTATTGAAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ĠĊŔĊŖŦŖŦŦĊŖŖĊŖŖĠŖŖĠŖŦĠŖŖĊŖŔŖĠŖĠĊŔŖĠŖĠŖŖĠĊŦŖĊŦĠŖŖŖŖŖĸŦŦŖĠŖŖŖŖĸ
                                                 AACGAAGACTTATCACAAAAAAAGAAAAATAAGTAATAAAAAAGGATTTGTTACCAATAGT 6162
                                                                                                                                                                                                                TTTACACATGCAATTGAAGAAGTTTAAAGAAATAGCTACAGTAGCAATTGATTTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGTCATA 1779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAAAGCAGAAAAAGCGAAACAACAAGATAATAATGAAAGTACAGTGGAAAAATGTCAG 1652
                                                                                                         ÄTTÄAAGATACCAACAATCAAGATGAGTTTGCTTTAAAATATTTCGGACATTGTATTGAT
                                                                                                                                                                                                                                                                                                                    0.5%;
ilarity 44.6%;
Conservative
                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                    Score 44.6; DB 1; Length 4329; Pred. No. 19; O; Mismatches 324; Indels 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUCLEIC ACIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1364
                                                                                                            315
                                                                                                                                                                                                                  255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 34
US-10-793-626-1557/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; OTHER INFORMATION: Description of Artificial Sequence: synthetic; OTHER INFORMATION: nucleic acid sequence US-10-793-626-1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                        Ş
                                                                                                                                       밁
                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                           á
                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PUJ4880US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: PATENTIN Ver. 2.1
SEQ ID NO 1557
LENGTH: 1500
TYPE: DNA
ORGANISM: Artificial Sequence
FEATURE:
THE PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1557, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                     Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   724
                                                                                                                                                                                                                                                                                                                                               h 0.5%;
Similarity 52.7%;
96; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAAAGA 6589
                                                                                                                                                                                                                                                                                                                                                     0;
```

```
6163 TCAGCTACTCATACTTTAAAATCTTTATTGGCAAAATGCCGCTGGTTCAGGACAAGCCGGA 6222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTATATTAAATGCAAAACATTATTCTGTAAAATCAGGAGATTACACGAATTCAATCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGGCAGGAACTGTTAATATCAACAAGGTTTATGGAGAAACAGAAGCTCTTGTAGAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAA-----ATGTTTTAAAAGTCTTAGTTTCAAATGACATTGAGAGAAATCATTTTGAT 429
TTCAAAGTAGCTATTGAAGGTGTTATATTTGATATTAACCTAAAAGAACTTAAAAGTGGA
                                                              GTCGCAGCAGCCGGGTAGGAGCCGGAGTGGCAGGAACCGTTTCCGTAAATCAATTTGCA
                                                                                                                                   ATTGGAAAACCAATTCAGATTGAAAATATAAAACCAATTGAATCAATTATTGAAGAAGAA
                                                                                                                                                                                                 GGAGAAGAAGCTGAAATTACAGCAGATTCTAAGCAAGGAATTTCCTCTTTTGGAGTCGGA
                                                                                                                                                                                                                                                                                                                                                                                                          GCACATATTCAACAAGAAGATGAACAAAGTGCAAGAGAAGCAACTGAAAAAATTAGAAAAA 603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTAGTAGGTTCTGTTGGTGGGAAATGTAGGAGTAGGAGCTTCTTCTGATACCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATAAAGTCGTTTTTGAAACAGATTCAACAAATCACGATGATGACCTTGCATCGTTAGAA 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGGCATGTAATGGTAGTTT-----GGTTAAAGCATTTAGACAGTGTGGCTTTGAAATT
                                                                                                                                                                                                                                                                       ATGAAAGCAGAAAAAGCGAAACAACAAGATAATAATGAAAGTACAGTGGAAAAATGTCAG
                                                                                                                                                                                                                                                                                                                                     ATTATAAAAAAGAATACCAAGACAAGAGTTGGAAAAACTACAATGTCTGATGAAGGTTTC
                                                                            6582
                                                                                                                                                                                                            6522
                                                                                                                                                                                                                                                                              663
                                                                                                                                                                                                                                                                                                                                               6462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     483
          783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6402
                                                                                                                                          723
```

7134 AGAGGAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGGAGGAGCAGCAATCGG AGAGAATAAAGCTAATGCTAACATAGAAGCAAGTGATGGAATGATATCAGCTAATTCTGG Score 44.4; D Pred. No. 15; O; Mismatches B 86; 1. Length 0, 7193 640 0

ş

7314

\$

7315

```
RESULT 36
US-10-793-626-4195/c
                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 35
US-10-793-626-4198/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                    Sequence 4195, Application US/10793626
Publication No. US20050255478A1
GENERAL INFORMATION:
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PU3480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT PILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
PRIMBER OF SEQ ID NOS: 4472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: PATENTIN Ver. 2.1
SEQ ID NO 4198
LENGTH: 3145
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 4195
LENGTH: 3328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS
FILE REFERENCE: PU3480US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 4198, Application US/10793626 Publication No. US20050255478A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Description of Artificial Sequence: synthetic
OTHER INFORMATION: nucleic acid sequence
-10-793-626-4198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4967
                                                                                                                                                                                                                                                                                                                                                                                                         5267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    519
                                                                                                                                                                                                                                                                                                                                                                                                                                                   127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               159;
                                                                                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                       CAGTTGCTCATACAAATATTGGAAAACAATCAGTTATAGCTATTGTAAAA 5316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAACAATAAATACAATTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAA 5266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACGTTAAACAGGTTGATATTGCTGGGCCAGGTTTCATCAACTTTTATCTGGATAATCAAT 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAGATCAAA 5206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCAGGCTGGAATCGGAGGAATGGTATCTGTCAATCGTGGTTCTGATGAAACGGAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGATACTAAAAATGGAGATTATTCTTCTAATATTGCTATGGTTTTAACAAAATTGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TACAAGCTTTGAATGATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTAGTATTAGAAAAGCTAACCTCGCAGAAGATATTCCAGAAATTAAAATTGAAATACCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGCTTTGATTACAGGAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    }:
                                                                                                                                                                                                                                                                                                                                                                 AATCTAAGAATACTAACATTTTATTAGAATATGTATCAGCTAATCCAACA 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTTAACAGACATTATTCCAGAAGCTATCACAAAAGGTGATCGATTTGGATATGCAACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCGTAATCCACGTGAAATTGCGCAAGCTATTGTCGATCATTTAGATACAAGCAAAGCAC 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45.44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 44.4;
Pred. No. 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches 191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 3145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AND PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             248
                                                                                                                                                                                                                                                                                                                                                                                                                                                 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

```
밁
                                                                                                                                                            ð
                           ş
                                                             문
                                                                                           Ş
                                                                                                                                                                                               밁
                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                 US-10-793-626-3503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-793-626-3503/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-793-626-4195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 96
                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 3503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3503, Application US/10793626
publication No. US20050255478A1
GENERAL INFORMATION:
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS
FILE REFERENCE: PU3480US
                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 3335
                                                                                                6063
                                                                                                                                 2267
                                                                                                                                                                 6003
                                                                                                                                                                                                                                 5943
2147
                                                               2207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7134
                                                                                                                                                                                                                                                                  114;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     l Similarity
96; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA 2115
                              AAGAAAAATAAGTAATAAAAAAGGATTTGTTACCAATAGTTCAGCTACTC 6172
                                                                                              AGATAAAGTGGTAGATAAAGTATTCAAAAATCTTAATATTAACGAAGACTTATCACAAAA 6122
                                                                                                                                 ACAAGCAGATGTGATTGTTAGCGCAGTAGGACAACCTGGTTTAGTTACTAAAGAAAATGT
                                                                                                                                                                                                AGCTAACGCAACTGTTACGATTTTACATTCACGTACAAAAAATATGAATGCACACTTAAA
                                                                                                                                                                                                                               AGCAATAGGAGCCTCAACCAGTGTGAATGAAATTACAGGATCTACAAAAGCATATGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA 7315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAGGAACAGAAGTTTTAAAAACTTTAGACGAAGTTAACAAAGAACAAGATAAAAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCATTAAACACTGTAAGTAATCCTTGTAAAACTGTATAAGTGACAGAAACAACAAGAAT 2177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAGGAAAAAAATATTAAGCAAACAGCAGCAAATGCAGGAATCGGAGGAGCAGCAATCGG
AGGAGATGTAGCATATGATGAAGTAAAAGAAATAGCTAGTGCAATTACTC
                                                               CAÑAÑARGGCGCAGTAÁTTATAGATGTTGGTAATÁCACCTGÁTGAAAÁTGGAANÁTTAÑA
                                                                                                                                                                AGATTCTACAGTGATTGCTAAAGAAGAAACAGATGATTATATTACTACTCAAGGGCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCCAATGTCTTGGTAAATAATTTTGGAACAGCTGTAGAAGATAGAAAAATTCTGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAGAATAAAGCTAATGCTAACATAGAAGCAAGTGATGGAATGATATCAGCTAATTCTGG
                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0.5%;
llarity 52.7%;
Conservative
                                                                                                                                                                                                                                                                                                                                                 Description of Artificial Sequence: synthetic nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description of Artificial Sequence: synthetic nucleic acid sequence
                                                                                                                                                                                                                                                                              0.5%;
49.6%;
                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 44.4; DI
Pred. No. 19;
0; Mismatches
                                                                                                                                                                                                                                                                Score 44.4; DB 1;
Pred. No. 19;
D; Mismatches 116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUCLEIC ACIDS
                                                                                                                                                                                                                                                                                                 Length 3335;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 3328;
                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AND
                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROTEINS
                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                6062
                                                               2148
                                                                                                                                                                                                2268
                                                                                                                                                                                                                                 6002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2237
                                                                                                                                 2208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7193
                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

RESULT 38

```
RESULT 39
US-10-793-626-49
i Sequence 49, Application US/10793626
i Publication No.: US20050255478A1
i GENERAL INFORMATION:
i APPLICANT: KIMMERLY, WILLIAM JOHN
ITILE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROFI
CURRENT APPLICATION NUMBER: US/10/793,626
i CURRENT APPLICATION NUMBER: B0/164,258
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
INUMBER OF SEQ ID NOS: 4472
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 49
I LENGTH: 2454
TYPE: DNA
ORGANISM: Artificial Sequence
PEATURE: OTHER INFORMATION: Description of Artificial Sequence: synthetic
OTHER INFORMATION: nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; ORGANISM: Artificial Sequence; PERTURE:
; PERTURE:
; OTHER INFORMATION: Description of Artificial Sequence: synthetic
; OTHER INFORMATION: nucleic acid sequence
US-10-793-626-4066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-793-626-4066/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERWIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PU3480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 2004-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: Patentin Ver. 2:1
SEQ ID NO 4066
LENGTH: 3771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 4066, Application US/10793626 Publication No. US20050255478A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
  10-793-626-49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACAAGCTTTGAATGATTCTCATATTACAAACGTTTCTGCTGGAGGCGCTGCAAGTATTA 5086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGTTGCTCATACAAATATTGGAAAACAATCAGTTATAGCTATTGTAAAA 5316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGATACTAAAAATGGAGATTATTCTTCTAATATTGCTATGGTTTTAACAAAAATTGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTAGTATTAGAAAAGCTAACCTCGCAGAAGATATTCCAGAAATTAAAATTGAAATACCTA 2273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGCTTTGATTACAGGAACGAAGGTAAATCCTTTTAGTGGAAAGAATACAAAAGTCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACGTTAAACAGGTTGATATTGCTGGGCCAGGTTTCATCAACTTTTATCTGGATAATCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGTTAGTGATTCTGAGTTTGAAGGAGTAAGTTCTTTCAATGTAGATGCAAAAGATCAAA 5206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCGTAATCCÁCGTGAÁATTGCGCAÁGCTATTGTCGATCATTTAGATACAAGCAÁÁGCAC 2153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCAGGCTGGAATCGGAGGAATGGTATCTGTCAATCGTGGTTCTGATGAAACGGAAGCTT 5146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTTAACAGACATTATTCCAGAAGCTATCACAAAAGGTGATCGATTTGGATATGCAACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAACAATAAATACAATTGCCGGAAATGCAAATGGAGGAAAAGCGGCTGGAGTTGGAGCAA 5266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.5%;
ilarity 45.4%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 44.4;
Pred. No. 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches 191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
                                                                                                                                                                                                                                                                                                                                        NUCLEIC ACIDS AND PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 3771;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
```

```
RESULT 40
US-10-793-626-1527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                            Ś
                                                             밁
                                                                                         Ś
                                                                                                                        윰
                                                                                                                                                      Ś
                                                                                                                                                                                       밁
묽
                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                     US-10-793-626-1527
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1527, Application US/10793626
publication No. US20050255478A1
GENERAL INFORMATION:
APPLICATI: KIMMERIV, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS
FILE REFERENCE: PUJ480US
CURRENT APPLICATION NUMBER: US/10/793,626
CURRENT FILING DATE: 10904-03-04
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
PRIOR FILING DATE: 1999-11-09
PRIOR OF SEQ ID NOS: 4472
                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 1527
LENGTH: 2454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 0.5%;
Best Local Similarity 48.6%;
Matches 152; Conservative
                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 24
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: Description of Artificial Sequence: synthetic OTHER INFORMATION: nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2202
2322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7923
                                                                                                                                              7746 ATTAGGAAAAAAATATTGATGATTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAA
                                                                                                                                                                                                                    7686 TGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCT
                                                                                                                                                                                                                                                      152;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTAGGAAAAATATTGATGTTATTGTAAAAGATAAATCGGAATTGAGAGCGGAAGCAAA
                                                                                                                          TTCÁGAGCAAAATATTAATATTGTTGTTÁCTGÁTAAAGCGAAAGAAAAAATTGCAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACAGAATCATAA 2454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCTGAATCTCAA 7995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCCTATGCAGAATTAAATTCTAATGGAAGATCAAATATCAGTATTAAAAATTCTAAGCT
                                                                                                                                                                                       TGATCATGATGGTAAAGAATTTAAGTATGATATTTATGAAATTACAGCTAAAAAAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATGAATTCAGAGGTTGAAATTGAGAAGAGATATTTTCAATGAAGAAAATAGAGTAACTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGATATGATCCTGAATATGGTGCTAGACCACTCATTAGAGCAATTCAAAAAACGGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAA---AAGCAAAGAATGA
AATGAATTCAGAGGTTGAAATTGAGAAGAGTATTTTCAATGAAGAAAATAGAGTAACTAG
                                                                                           AGGATTAACCGTAGGAGCGGTAGCTGCCGGAGCCATTATCTCAA---AAGCAAAGAATGA
                                                              AGGATATGATCCTGAATATGGTGCTAGACCACTCATTAGAGCAATTCAAAAAACGGTTGA
                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                    0.5%;
48.6%;
                                                                                                                                                                                                                                                     Score 44.2; DI
Pred. No. 19;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 44.2;
Pred. No. 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               158;
                                                                                                                                                                                                                                                        158;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 2454;
                                                                                                                                                                                                                                                                                      Length 2454;
                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AND PROTEINS
                                                                                                                                                                                                                                                        ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7745
                                 7922
                                                                                              7862
                                                                                                                             2261
                                                                                                                                                             7805
                                                                                                                                                                                            2201
                                                                                                                                                                                                                          7745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2201
                                                                2321
```

```
Qy 7923 CCCTTCTAAAGGAATTGGAAGAGATCAATGTCAAAGTGGAAAAGAAACAGAGTGAC 7982

Db 2382 TGATCATGGTAAAGAATTTAAGTATATTTATGAAATTACAGCTAAAAAAGAAAC 2441

Qy 7983 TGCTGAATCTCAA 7995

Db 2442 AACAGAATCATAA 2454

Search completed: November 26, 2005, 06:38:49

Job time: 317 secs
```